DOCUMENT RESUME

ED 239 072 CE 037 906

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TITLE Ethnographic Research on Reading Instructional Strategies for Adult Beginning Readers.

INSTITUTION Virginia Commonwealth Univ., Richmond. School of Education.

SPONS AGENCY Virginia State Dept. of Education, Richmond. Adult Education Service.
PUB DATE 82
NOTE 161p.; For related documents, see ED 213 990 and ED 219 552.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC07 Plus Postage.
DESCRIPTORS *Adult Basic Education; *Adult Literacy; Adult Programs; Adults; Adult Students; *Beginning Reading; Classroom Techniques; Educational Needs; *Educational Strategies; Ethnography; Field Tests; Guidelines; Learning Modules; Learning Processes; Material Development; Needs Assessment; Pilot Projects; *Reading Instruction; Student Characteristics; Student Needs; *Teaching Methods
IDENTIFIERS 310 Project; Virginia

ABSTRACT

A project was undertaken to develop, field test, and revise strategies for adult beginning readers (ABRs). During the first phase of the study, the researchers identified roadblocks to use of word recognition clues by ABRs. Based on data and feedback from local and state piloting and general principles of learning, the project staff developed the following strategies for ABRs: phonemic cue, segmenting, phonemic/syntactic, /e/, spelling cluster, and semantic cueing. After finalizing these strategies, the project staff developed a series of modules for use in training adult basic education (ABE) teachers in using the modules. To facilitate their acceptance, the modules were presented in a workshop format. The final phase of the project involved a field test of two pilot modules dealing with segmenting and the variable vowel /e/. Teachers' reaction to these modules showed that 90 percent of those evaluating the module on segmenting and 57 percent of those evaluating the module on the vowel /e/ felt that the modules complemented or facilitated the teaching of their existing reading programs. (The two teacher questionnaires are appended.) (MN)

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ETHNOGRAPHIC RESEARCH ON READING INSTRUCTIONAL STRATEGIES FOR ADULT BEGINNING READERS

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1982

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This ethnographic research project was funded under Section 310 of the Adult Education Act, P.L. 91-320 and amendments, as administered by the Adult Education Service, Virginia Department of Education, Richmond, Virginia.

The research was supported in whole or in part by the U.S. Department of Education and the Virginia Department of Education. However, the opinions expressed herein do not necessarily reflect he position or policy of the U.S. Department of Education or the Virginia Department of Education, and no official endorsement by the U.S. Department of Education or the Virginia Department of Education should be inferred.

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Preface

This report is addressed to teachers of adult beginning readers, adult basic education supervisors and directors, and reading and adult education researchers. The intended audience will have varied backgrounds in both reading and adult education, therefore technical terms are either avoided or defined within the text.

Every effort has been made to keep this report readable. However, because chapters were written by different authors differences in styles, interpretation, and some repetition have been inevitable. Despite this diversity and perhaps because of it, this report represents a comprehensive picture of a year-long study on the development of instructional strategies for adult beginning readers.

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CHAPTER 1

NEED FOR READING INSTRUCTIONAL STRATEGIES FOR ADULTS

Nancy Boraks

Instruction of adult beginning readers has been criticized for a number of reasons. Until recently, the foremost criticism has been that adult education teachers are practicing, not teaching, their students. Now a new criticism has emerged. Boraks (1979) and Boraks and Schumacher (1981) have pointed out that the reading behavior, expectations, backgrounds and learning contexts of adult beginning readers (ABRs) differ markedly from that of the child beginning reader. Yet, methods or materials suggested for adults are derived from approaches developed for children.

Some ABRs have learned to read with child-based approaches. However, many ABRs become dropouts. While a variety of reasons for dropping out are given, it appears that many ABRs drop out when their learning plateaus or expectations are not met (Boraks and Schumacher, 1981). There are certain phases or steps in the learning-to-read process where these plateaus or roadblocks to learning occur. Thus, while child-based approaches cannot be considered totally inappropriate, adaptations are needed to enable more adult learners to avoid roadblocks which occur when these approaches are used. It is assumed here that whereas some ABRs do make progress with current methods and whereas a totally new methodology might require extensive and expensive changes in teaching materials and methods, the need is to

seek to adapt current methods and not try to develop totally new approaches to teaching reading to ABRs.

Roadblocks to ABRs' learning occur because current instructional strategies do not accommodate the ABRs' unique learning needs. Instructional strategies are the plans or "set of steps for reaching a learning goal" (Harris and Hodges, 1981, p. 311). It is within this set of steps where ABRs are directed how to analyze and process print that roadblocks to learning seem to occur. That is, general reading curriculum goals and skill sequences seem valid but as Boraks points out, the specific steps for reaching these goals and making taught skills usable needs to be adapted (Boraks and Schumacher, 1981). It is suggested that two types of adaptations are required:

1. Broad changes which accomodate the general learning behavior and learning context of ABRs. For example, the instructional time of ABRs is limited to several hours a week. Consequently, instructional strategies for the ABR to be pervasive, must be self-instructional or include steps ABRs can take to enhance their own processing of information.

2. Specific changes need to be made to clarify and generalize use of taught reading skills. For example, ABRs may not make the generalization that the sounds at the beginning and end of the word dad are similar.

Both general and specific learning needs of ABRs would have to be identified before instructional strategies could be developed. Therefore, the purpose of this project was to 1) identify ABRs' general needs and specific roadblocks in learning-to-read; 2) develop instructional strategies which would address these needs and roadblocks; and 3) develop and evaluate teaching modules which would present these strategies to adult education teachers.

Background of the Study

Instructional strategies which will enable more ABRs to profit from various types of instruction can be developed once roadblocks to learning are identified. There are however, several problems hindering the development of both general guidelines and specific steps for such instructional strategies.

Problem 1: There is little research on the general learning behavior of ABRs. There is a great deal of research on the learning behavior of adults in general (Knowles, 1977; Knox, 1977) but ABRs differ from most adults. For example, Schumacher comparing ABRs' behavior to reported research on other adult learners found that there was greater variability in the ABRs' phases of development and consciousness than in other adult learners (Boraks and Schumacher, 1981). This finding precludes the unquestioning use of general research on adult learners for setting definitive guidelines for teaching ABRs.

Problem 2: There is little research on the learning-to-read behavior of ABRs. The development of instructional strategies for ABRs should be based upon knowledge of the learning-to-read process of these adults. However, little research on this topic can be located. Monroe (1932) and Raisner (1978) did study non-proficient readers, but these were college bound adults. Whyte (1981) provides a careful analysis of language related behaviors of ABRs but does not comment on learning-to-read behaviors. Boraks (1978) and Boraks and Schumacher (1981) provided the only in-depth analysis of the reading behavior of ABRs in adult education programs.

Problem 3: There is a lack of appropriate theory. Learning strategies for ABRs might be expected to be based upon reading theory. However, current reading theories are based on knowledge of children or proficient adult readers. Moreover, these theoretical reading models are considered highly exploratory and incomplete (Davis, 1972).

These problems suggest that in developing instructional strategies for ABRs, no definitive body of knowledge or theory is available upon which to establish a firm prestructure. Guidelines for instructional strategies can however, be drawn from observed behavior of ABRs and more cautiously from available research on the adult and child beginning reader. That is, the solution seems to require basing specific guidelines upon the limited available research on reading behavior and adapting these guidelines according to feedback from actual practice. Thus, it was assumed instructional strategies and guidelines developed would require extensive analysis and confirmation within actual instructional settings. An in-depth and on-going evaluation was planned. However, planning for this evaluation of newly developed instructional strategies and related guidelines for ABRs also presented a number of problems, including:

Problem 1: ABRs do not constitute a stable population. ABRs in adult basic education classes attend erratically and drop out early (Boraks, 1979). Experimental research designs require a stable population.

Problem 2: The learning-to-read task is complex. Adult beginning readers face an enormous cognitive and affective task in learning-to-read. Learning-to-read is in itself a complex cognitive task and seems to be

made more difficult due to the interaction of affective factors. For example, Bowren and Zintz (1977) point out that many adult learners may be less likely to try new approaches due to the strength of long-standing habits, concern with failure, and a "tendency to have their ego and opinion so involved with an event that not much is learned from it." (pp. 64-65).

Experimental research methodology requires that important variables be preset or fixed. To fix or set variables within a complex learning task often results in the distortion of the task (Guba, 1978). Moreover, it is not possible to pre-determine variables when all relevant variables, as in this study, may not have been identified.

Problem 3: There is a great diversity of teachers, contexts, methods. Adult education teachers have very varied backgrounds. Some have never had a reading course, others may have an advanced degree in reading. Some have had extensive teaching experience with children and adults; others have had none. Even the learning context varies. Some adult education programs provide individual instruction, others provide group instruction. Methods used by teachers vary. Some teachers use intensive decoding programs, some computer-based, some a language-experience approach and so on. It would be fiscally prohibitive to evaluate instructional strategies on a developmental basis in all settings with an experimental model.

The problems inherent in evaluating instructional strategies could be overcome by the use of a research methodology which accommodates the complexities inherent in many adult basic education instruction settings. This appropriate research methodology is ethnography.

Framework of the Study

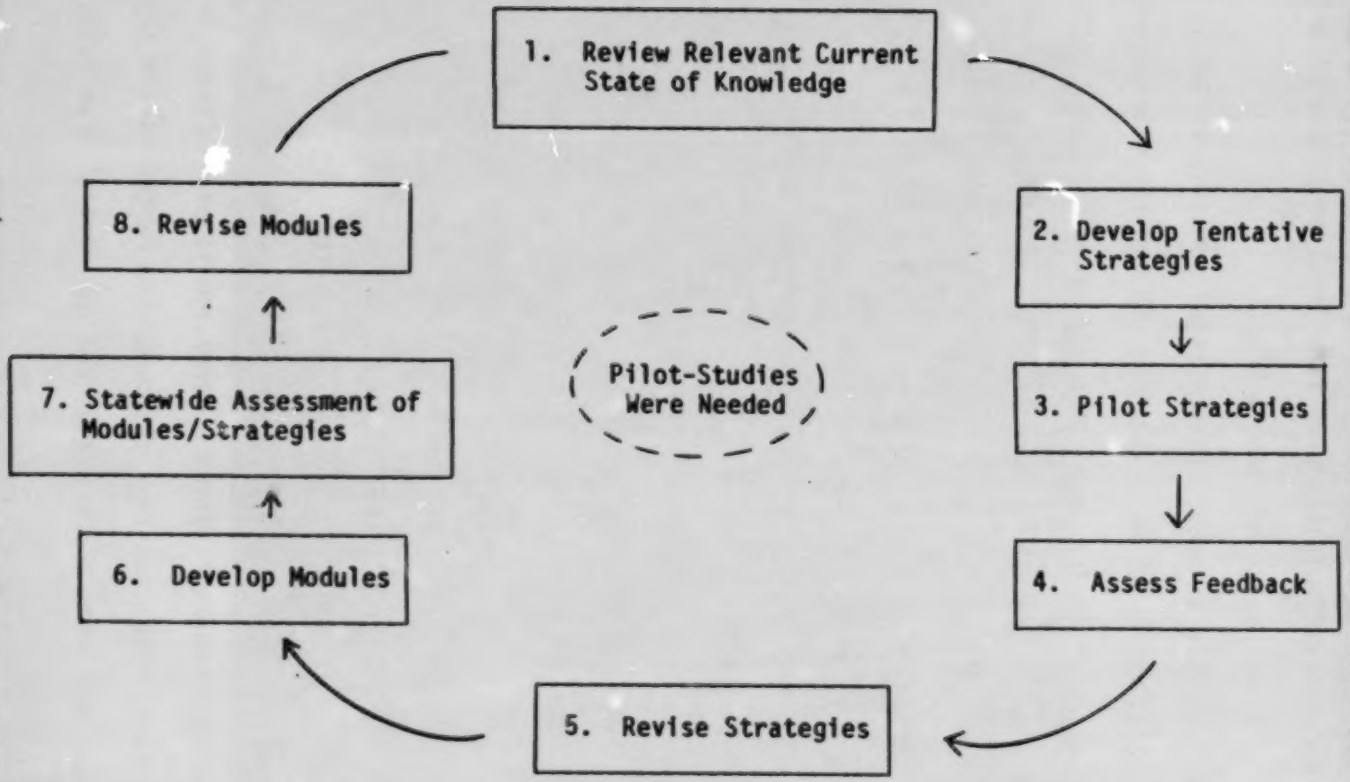
Ethnographic research is most appropriate for the study of complex phenomena within complex settings (Guba, 1978; Boraks, 1979). Moreover, ethnographic research provides the continuous feedback needed for adaptation of developing strategies. Thus, an ethnographic approach was used during the developmental phase of the study. Four strategies were developed and adapted during this phase. Once strategies were developed, survey research was used to evaluate the dissemination vehicle or modules (see Chapter IV).

The plan for the development and evaluation of strategies and modules was cyclic (see Figure I). This development and evaluation cycle included a number of activities. First, available research on the reading and learning behavior of ABRs was reviewed. Roadblocks to learning were then identified and appropriate strategies developed. Strategies were taught to graduate students who in turn taught and observed the teaching of these strategies to ABRs. All this teaching was taped and data from these audio tapes and related field notes were discussed at weekly staff meetings. Here, needed changes in developing strategies were identified.

When decisions had to be made on alternative steps in a strategy, small pilot studies were used to evaluate alternatives. That is, using small groups of available ABRs, alternatives were tried, learning evaluated and the most feasible alternative selected.

When adults indicated a willingness to use the strategy and demonstrated that they were learning from the strategy, a module for presenting this

FIGURE I



CYCLE OF DEVELOPMENT AND EVALUATION

Figure 1

strategy to adult basic education teachers was developed. All four strategies were tested locally. Three of the strategies, two in module form, were tested state-wide. Available feedback from local and state piloting was incorporated into final drafts of each module.

The local piloting of each strategy took from five to twelve weeks. Local and state piloting of the strategies and modules overlapped; however, the cycle was appropriate for developing and evaluating both strategies and modules. For example, feedback from teachers and students on one strategy would reveal unexpected concerns and variables which could then be accomodated in the development of subsequent strategies. Thus, the use of a cycle for developing strategies facilitated evaluation because the evaluation process became increasingly focused as learning and teaching variables related to using strategies and modules were identified.

Local and state piloting involved different populations. The main criteria for selecting local piloting population was accessibility. Therefore, the main population included ABRs from a nearby adult urban learning center. Occasionally 17 year old beginning readers from a rural high school were involved in pre-testing specific aspects of strategies.

Participants in the local piloting of strategies, were Level I adult beginning readers who agreed to participate in the study. Some ABRs were initially shy when approached but all agreed or requested to participate when they saw their peers involved. Forty adults participated in some phase of the local field testing. These adults ranged in age from 16-56; 60% were black, 40% white. Job status and residential area indicated that

most adults were urban low-economic blue collar workers; a small number were urban welfare recipients. State piloting population and sites are described in Chapter IV.

Summary and Overview

This project involved the development, field-testing and revision of reading strategies for adult beginning readers. These strategies were needed to meet unique learning-to-read needs of ABRs. Chapter I has presented an overview of the project; Chapter II describes and provides the rationale for the instructional strategies; Chapter III discusses the development of modules for teaching instructional strategies; Chapter IV presents an analysis of the results of state field-testing; and Chapter V provides a summary and brief discussion of the implications of the project.

CHAPTER II

INSTRUCTIONAL STRATEGIES: RATIONALE AND DESCRIPTION

Nancy Boraks

Two facts dictate the need for special instructional strategies for ABRs: 1) reading behavior of ABRs and children differ but current approaches to teaching ABRs are based on research with children; 2) many ABRs are not profiting from current instruction. Consequently, the goal here was to develop instructional strategies which spoke to ABRs' unique needs and dealt with factors inhibiting their learning. Informationa relating to these unique needs and inhibiting factors was used to guide the development of reading instructional strategies.

Development of strategies involved a multi-step process. First, general guidelines based on available knowledge of adult and ABR learning behavior were established. The guidelines were used to provide a framework for the structure of lessons. Next, specific learning-to-read problems of ABRs were analyzed in order to target instructional needs. Instructional strategies for targeted areas were then developed, using established guidelines. Finally, both the guidelines and strategies were adapted to meet needs revealed during local and state piloting. The development of both these general guidelines and instructional strategies are discussed below.

General Guidelines

Guidelines for instructional strategies were drawn from three research sources (learning research, reading research and research on the ABR) and one empirical source (data from local piloting).

General learning theory like reading theory, is based largely upon research with the child or adult proficient learner. There are differences between the learning behavior of these populations and the ABR (Zahn, 1967; Knowles, 1977; Brim and Kagan, 1980; Boraks and Schumacher, 1981), but some general guidelines seem relevant for all learners. For example, Blume (1971) reviewed Combs' research on learning and concluded that learning is enhanced when:

1. Few concepts are taught rather than many facts.
2. The learner feels a need to know.
3. The learner is willing to take risks.
4. The teacher frees rather than controls the learner.

Similar points are stressed by adult learning authorities (Knowles, 1977; Knox, 1977) and reading theorists (Smith, 1975; Stauffer, 1975; and Goodman, 1972).

Knowles (1977) reviewed research on adult learners and listed principles of learning emphasizing the importance of respecting/using the adults' experiences and viewing learning as a mutual responsibility (pp. 52-53). Reading theorists, Stauffer (1975); Goodman (1965); Smith (1975, pp. 159-163), have reiterated the need to teach concepts and to promote active

learning. They have translated these ideas into the guiding principle of stressing "knowing how" over "knowing what." The importance of "knowing how" for ABRs was demonstrated in an earlier study by Boraks. Boraks (1978) pre-tested the reading behavior of ABRs, then discussed this behavior with these adults, pointing out the skills they had and could use. Adults were then re-evaluated with a parallel form of the test. Most adults, now more conscious of their skills, did far better on the second test making greater and more consistent use of known skills.

Further support for Combs' general prescriptions for learning is found in other research on the ABR. For example, the need to involve and support the ABR in the learning task is consistently reiterated in the theoretical or case study research on ABRs (Friere, 1974; Clason-Hook, 1977). This research suggests that teachers must accommodate the ABR's need for self-control and active involvement because the adults' fear of failure and related reluctance to take risks is a consequence of feelings of being the object of, not determiner of, learning and life's events (Friere, 1974).

Emerging in-depth research on the ABR has provided additional insight into other needed conditions for learning. Boraks (Boraks and Schumacher, 1981) analyzed data gathered in a year long study of ABRs and pointed out that:

1. ABRs had specific ideas of how, not just what they want to learn. Students who did not understand the rationale for instruction were frustrated.

2. ABRs who appeared inattentive often simply did not know what to attend to.

3. ABRs' behavior was influenced more by what the teacher did, not by what the teacher told them to do.

4. ABRs were very teacher dependent in terms of using known skills.

5. ABRs profited more if learning efforts were extended beyond the classroom.

When the Combs' learning principles were considered in relation to these ABR learning behaviors, nine interrelated specific guidelines for instruction emerged. These guidelines were used to establish criteria for instructional strategies of ABRs, as delineated below.

General Guidelines	Criteria
1. Maximize active, independent learning.	Provide self-instructional strategies.
2. Stress how not what.	Teach process, not just skills.
3. Make learning usable.	Encourage out-of-classroom independent use of learning strategies.
4. Insure that desired focus of attention is known.	Provide overt clues to the desired focus of attention.
5. Teach by example, not by teacher directions.	Have teacher model desired behavior.
6. Provide clear rationale for lessons.	Clarify rationale for all teaching/learning steps.
7. Accommodate learner expectations.	Provide for adaptation of strategies.
8. Reduce fear of risk-taking.	Provide maximum opportunity for success, emphasize that guessing is right.
9. Relate learning to adult's needs.	Clarify relationship between learner needs and instruction.

These criteria were met by developing instructional strategies which focused upon the learner, not the teacher; providing a rationale for each learner step; stressing modeling of desired behaviors; and providing suggestions for promoting use of taught behaviors beyond the context of the classroom.

Field testing of instructional strategies resulted in the recognition of the need to have additional criteria. For example, when strategies were used in actual classroom situations it became clear that instructional steps for both teacher and learner had to be brief, clear, and have very familiar elements to them if strategies were to be learned and used. When strategies involved extended or many apparently innovative steps both teachers and learners became more cautious in adopting strategies. Also during piloting, the need for constant repetition of both strategy and rationale became evident. Students needed to be habituated to strategies if independent use was to occur. Therefore, repeated practice and teacher modeling were promoted to develop the confidence familiarity provides. These guidelines were added to the initial criteria for learning. This final set of guidelines provided the framework for the development and adaptation of strategies.

Specific Guidelines

Beyond the fact that the instructional strategies must address a unique need of the ABR, the guidelines outlined above dictated only one constraint upon the selection of the instructional target: strategies

were to speak to specific processes, not dictate skills. The emphasis was to be on how, not what.

To target areas for reading instructional strategies, research on reading behaviors of ABRs was reviewed. In addition, differences between the child and adult beginning reader were evaluated. In this way, specific and unique roadblocks to ABRs' learning were identified. While information on ABRs is limited, Boraks provides an in-depth analysis of the learning-to-read behavior of ABRs, and specifies six child/adult learning-to-read differences:

1. The ABRs frequently use spelling as a word identification aid, children rarely use this strategy.

2. ABRs respond idiosyncratically to individual words. Children tend to misread a word in a similar manner; over 75% of words misread by adults resulted in diverse renderings.

3. ABRs' general pattern of reading behaviors tends to be highly idiosyncratic reflecting more varied patterns of teaching, schooling and experience.

4. Succeeding ABRs vary or manipulate the vowel (read hatch: hitch, hotch, hatch) to identify a word, children compare and contrast word units (read: hatch: latch, patch, hatch) (Cunningham, 1975-6).

5. ABRs have difficulty holding a pattern; reading cat successively as cut, tack, cup.

6. ABRs, even succeeding ABRs, rarely use semantic cues. Children make greater use of these cues. (Boraks and Schumacher, 1981, pp. 33-118).

Thus, unique aspects of ABRs' learning include diversity; style of use and misuse of vowels, patterns, and semantic cues; and use of spelling.

A comparison of succeeding and nonsucceeding ABRs' learning-to-read behaviors was used to provide insight into both the ABRs' learning blocks and ways to overcome these blocks. Boraks (Boraks and Schumacher, 1981) also examined and described differences and similarities between succeeding and non-succeeding ABRs. Non-succeeding ABRs often did not use existing skills, did not integrate use of skills, focused upon single letters and were inhibited by lack of knowledge of vowels. That is, non-succeeding ABRs were blocked in the use of three word cues: graphic, phonemic and semantic. One similarity between succeeding and non-succeeding ABRs as noted above, was of great concern: neither group used semantic cues. Thus, continued progress of even the succeeding ABRs seemed unlikely.

The actual selection of instructional targets was guided further by consideration of the diversity of teaching methods of ABRs' instructors. The diversity of both the ABR learner and teacher dictated that there be diversity in the range of strategies themselves. Presenting diverse strategies would also promote a broad evaluation of ABRs' learning and avoid the implication that the breakdown in the ABRs' learning was due to a single factor. In fact, both the child's and ABRs' reading problems were often due to a breakdown in a variety of processes or use of cues (Vernon, 1977; Boraks and Schumacher, 1981).

To provide for the diversity of both learning and teaching behavior, one major roadblock in the use of each word recognition cue was selected and a strategy which would enable the learner to overcome this roadblock was developed. The fact that ABRs face roadblocks in the use of three major word recognition cues (graphic, phonemic, semantic) and the integrated use of these

cues suggest that strategies developed should promote the integrated use of cues. However, LaBerge and Samuels (1976) have argued that a reader can attend to only one cue at a time, suggesting, for example, that when the task is word recognition, the learner cannot attend to comprehension. On the other hand, other reading authorities (Goodman, 1965; Smith, 1975) have demonstrated that comprehension enhances word recognition. Moreover, Schwartz (1977) has demonstrated that effective beginning readers integrate the use of word recognition cues. Consequently, it was considered inappropriate to develop an unintegrated separate single strategy for overcoming learner roadblocks in the use of each word recognition cue. Therefore, a major roadblock to ABRs' use of each word recognition cue was identified and strategies were developed to promote both use of that cue and the integrated use of cues. The roadblock and rationale for developing related strategies are discussed below.

Phonemic/Graphic Cues

Most programs for teaching ABRs include use of phonemic cues. That is, most programs teach phonics or sound/letter relationships. However, Smith (1975) has suggested that phonics is learned through reading, not reading through phonics (p. 184). Other reading authorities argue that phonics must be learned first if reading is to be automatic. For the non-succeeding ABR neither point is completely valid. That is, the ABR who learns sound/letter relationships is not learning to read and the ABR learning to read specific words is not gaining skill in using sound/letter relationships.

Roadblocks To Using Phonemic/Graphic Cues

Boraks (Boraks and Schumacher, 1981) found that many ABRs could not use known letter/sound relationships or word parts in decoding new words. Consider ABRs' attempts to decode the words below:

Text	ABR Rendering
I can bake	I can book, kid, bl /b/, kill
my dad	my /d/ /d/, dog
He hid	He, that looks like did, /h/ house
They made a fire.	They meet at five.
I am rich and own	I am reaching over
Jim has a cold.	Joe him a cold.

These renderings indicate a misuse of phonemic, graphic and semantic cues; but a close analysis of these miscues suggests the basic problem is with the systematic analysis and use of phonemic cues. The ABR (who read bake as book, kid) was using prominent initial and final letters interchangeably to cue word identification. Many ABRs in fact seem to take in and store words in terms of initial and final letters. For example, a typical ABRs' explanation of why the word bloom could not be bark was, "Because bark is bk." Sounds heard clearly are used as word boundaries. Initial and final letters are apparently most clearly heard and thus, these become word boundaries. No sense of the importance of the letter sequence is suggested, even when the ABR knows the word; as the example below suggests:

> Rick, when asked how he would teach a word said, "I would teach 'make' -- I'd give the letters and make words for each sound -- like:

E - eat
A - apple
K - kitten
M - man

Then I could write a sentence. (Boraks and Schumacher, 1981)

What is the problem? Why would an adult decode the initial, but not decode the final d in dad? Why would an adult who saw that hid looked like did, not use known letter/sound associations to decode hid? The answer seems to be that these adults could not segment sounds; they could not isolate or integrate word parts to help with the identification of new words.

In addition, as the data above indicates, ABRs only occasionally use initial letters and their sense of syntax to render a grammatically meaningful phrase. Integrated use of cues is erratic. This analysis suggests that adults are not using known cues because they cannot segment or blend known letter associations and cannot sequentially map sounds onto letters in words. The inability to systematically analyze a word, to segment, to blend and read for meaning inhibits ABRs' use of phonemic cues.

This is not unusual for beginning readers. In 1953, Durrell and Murphy pointed out that "the child who learns to read easily is the one who notices the separate sounds of spoken words" (p. 556). While Durrell and Murphy, at the time, were referring to auditory discrimination, they later expanded this concept. By the 1970's, other researchers were documenting the relationship between a child's inability to segment and blend and reading failure (Vernon, 1977; Liberman and Shrankweiler, 1977; Williams, 1979). To what

extent then is the ABRs' problem unique? There seem to be two unique factors: 1) the ABRs' total and sustained disregard of letter sequence, and 2) the ABRs' obvious and sustained inability to generalize the use of known skills.

Rationale For Phonemic Cue Strategy

In developing an instructional strategy for overcoming this roadblock to using phonemic cues, potential problems in teaching ABRs to segment and blend were considered.

For the child learner, difficulty with segmenting and blending has been attributed to lack of linguistic awareness and conceptual ability. Linguistic awareness refers to the learner's ability, "to analyze words as strings of phonemes," an ability made difficult by the fact that a word (for example, dig) might have three phonetic segments but one acoustical unit (Liberman and Shrankweiler, 1977, p. 111).

Moreover, segmenting phonemes in a word and blending these back into a word is difficult because the sound associated with each segment of a word is influenced by and influences other letters/sounds in the word. That is, phonemes are co-articulated, so in the word sled, the /e/, influences the sound of /d/ and visa versa. Thus, when sled is rendered in segments /sl/ /e/ /d/, the separated sounds are distorted and blending is subsequently more difficult. Perhaps because of this, segmenting is not easily taught. Williams (1979) suggested an entire program was needed for teaching children to segment and blend; in fact, she developed such a program and the results while not validated seem promising. However, most attempts to influence

reading achievement through improving segmenting and blending have not been successful (Liberman and Shrankweiler, 1977). Learning of segmenting has not been shown to translate into general reading gains.

Despite this, concerns about the lack of transfer of segmenting/blending skills were allayed because most existing segmenting training programs were either of short duration or failed to meet our desired instructional guidelines. Most of the programs analyzed and critiqued by Liberman and Shrankweiler (1977) taught segmenting as a skill not as a process learners could use to tap know skills. Also, most of these programs placed the emphasis on teacher-directed not learner-directed instruction.

Some researchers have suggested that segmenting need not be taught. Goodman (1973, p. 489) suggested that if one can learn speech without a fully developed sense of phonemic organization one could learn to read without it. Yet, in a recent review of studies on segmenting and blending Richardson, Di Benedetto and Bradley (1977), suggest that teaching blending (and therefore segmenting) was important if transfer of learned decoding skills was to occur, (p. 328). Moreover, Goodman's (1973) statements about the relative non-importance of phonemic organization is further offset by the fact that lack of this ability clearly inhibits ABRs' progress.

The final concern in teaching segmenting was that conceptual problems are said to be inherent in learning segmenting and blending because the phoneme itself is an abstract concept. The conceptual complexity lies in abstracting sounds from words and mapping these sounds onto the abstract symbol/letter (Liberman and Shrankweiler, 1977; Rozin, Poritsky and Sotsky, 1971). Murray suggests that separating spoken words into sounds and printed

words into letters might be viewed as a class inclusion problem (1978, p. 103). However, unless all ABRs are considered to have severe conceptual limitations, these problems are not relevant for adults because Scribner and Cole (1981) and Boraks (Boraks and Schumacher, 1981) have suggested that assigning conceptual limitations to ABRs is inappropriate.

In summary, research indicates that beginning readers do have difficulty using phonemic cues due to segmenting and blending problems. Research suggests that teaching of segmenting and blending produces limited results. Thus, attempts to teach these strategies should be carefully monitored.

To determine if in practice ABRs would be able to use segmented sounds to identify a word and to deal with hypothesized conceptual problems two pilot studies were undertaken.

First, to determine if ABRs could use segmented sounds to identify words, twelve ABRs were given segmented words in context, that is, read sentences like: I can't read my /b/ /k/. The vowel was omitted since most ABRs could not render the vowel correctly and the rendering here would duplicate the type of response to print the ABR could provide. ABRs were able with almost 100% accuracy to get the segmented words. These same ABRs were less successful when the initial letter was given with context. Thus, in theory and practice the rendering of or segmented word seemed justified.

To determine if ABRs could deal with the linguistic and conceptual difficulties of segmenting and blending themselves, a second pilot study was undertaken. Twelve ABRs were provided with oral instruction on segmenting and blending. These adults were provided with practice in segmenting words,

using words of increasing difficulty: polysyllable words, words ending in a long vowel (go), words starting with a short vowel (at), one syllable words with a long vowel (week), and finally one syllable words with short vowels (wet) (Liberman and Shrankweiler, 1977, p. 123). Initial teaching steps included the use of pictures to help ABRs keep the whole word in mind as each letter was decoded, and the use of markers to indicate each letter sound.

Feedback indicated that adults did not profit from the use of pictures and teachers found this cumbersome and childish. Therefore, use of pictures was eliminated. A simplier approach was tried. Twelve additional ABRs were asked to orally segment and blend words, using words of increasing difficulty. Most ABRs were immediately able to segment and blend poly-syllable words and with some practice to segment the initial consonant (/g/ /o/), (/c/ /at/). However, adults were slow to develop the idea of segmenting each letter sound as the field note below indicates:

> One adult when asked to segment cat said, "/c/ /at/." I asked him to break down /at/ further. He said, "I can't do that because it's a word." (9/24/81)

Most of these adults even while being exposed to an intensive single letter phonics program did not see the relationship between words and sounds. It took these adults six to eight sessions to develop ability to orally segment and blend phonemes. However, it was clear that this ability could be developed.

Finally, to determine if ABRs would use known sound/symbol associations in all parts of a word to identify an unknown word, twelve ABRs were asked to segment unknown words when these words were encountered in a list or text.

ABRs had difficulty dealing with letters in sequence. When the teacher pointed to each letter in sequence and asked the adult to give the sound/symbol association, ABRs were successful. However, ABRs clearly needed a strategy for self-directed use of this skill.

These pilot studies indicated that problems discussed above which appeared to be inherent in the teaching of segmenting and blending were either not relevant to ABRs, not valid, or not overwhelming.

The potential this strategy had for enabling ABRs to sequentially analyze a word and to use known skills overrode all remaining concerns. A segmenting/blending strategy was developed; the development is described below.

Segmenting Strategy

A strategy to help ABRs sequentially segment and blend word elements was developed (Boraks, 1982a) based on what Richardson, Di Benedetto and Bradley suggested was the most promising model for developing segmenting. abilities. Their model included:

1. Visual analysis: The reader organizes the component letters spatially in left to right order.

2. Sound/symbol correspondence: The reader orally produces the phonic sound corresponding to each of the components in a temporal order that matches the spatial order.

3. Blending: The reader orally produces an ordered blend of the sound (Richardson, Di Benedetto and Bradley, 1977, p. 331)

The general guidelines for ABRs' instruction strategies discussed earlier required that this model be adapted to provide for an overt

student response and a student self-instructional strategy. Thus, the following strategy emerged; ABRs when meeting an unknown word were to:

1. Cover the word with the thumb
2. Move the thumb back to reveal each word part
3. Give known letter sounds as each word part is revealed
4. Skip unknown letter/sound associations
5. Blend known sounds
6. Reread the word in a sentence

These steps were translated into a one-liner prompt, "thumb through the word." Many ABRs preferred to use the tip of their pencil rather than their thumb since this seemed more mature, but they still called this strategy "thumbing." Students were also encouraged to use this strategy with known words. Using thumbing with known words helped them clarify letter/sound associations, provided needed practice in blending, and provided ABRs with a systematic guide to the mapping of sound/symbol associations. For unknown words this very simple twist on available segmenting strategies provided the ABR with a system for using known skills. The final step promoted integrated use of phonemic and syntactic cues.

This strategy was tried with twenty ABRs. These ABRs were able to successfully decode new words using this strategy. It was expected that there would be difficulty when thumbing through words with digraphs or diphthongs. However, this was not a major problem; ABRs tended to know the most frequent digraphs and knew so few vowel sounds that all vowels were usually omitted. Adults had initial problems with blending and tended to be reluctant to use

this strategy independently. Problems with blending would only be overcome with repeated teacher directed practice. Reluctance in using the strategy was overcome when ABRs saw their peers using the strategy.

No test data was collected on the influence of the use of the strategy on general reading achievement. Data was collected on the effectiveness of this strategy on decoding new or unknown words. For the twenty ABRs who were introduced to this strategy in its final form, gradual improvement occurred. That is, after initial instruction, when the teacher prompt was provided most students could decode an unknown word systematically, using known sounds.

Phonemic/Syntactic Cues

The "thumbing" strategy enabled the adults to focus attending, and to use known decoding skills. Thumbing, however, did not directly address how adults were to deal with another major difficulty in using phonemic cues: vowels. In the thumbing strategy, ABRs simply skipped vowels. As an initial strategy, this was considered simple and useful, and most effective with short words. However, as ABRs made initial progress, a strategy which would enable them to deal directly with vowels was considered essential if they were to learn to deal with longer words.

Roadblocks To Use Of Phonemic/Syntactic Cues

Boraks (Boraks and Schumacher, 1981) examined the reading behavior of succeeding and non-succeeding ABRs and indicated succeeding ABRs had an interesting strategy for dealing with vowels. Successful ABRs dealt with the

unknown word by manipulating the vowel. For example in reading the phrase, "It had rust on it," successful ABRs would look at rust and say, "rist, rost, it had roost, it had rust on it." In other words, neither succeeding or non-succeeding ABR knew the vowel, but the succeeding ABR had a strategy for dealing with this unknown. They would manipulate or vary the vowel and use syntax. The non-succeeding ABR was non-systematic, avoided the vowel and did not use syntax.

The majority of all ABRs' miscues involved misrendering of the vowel (Boraks and Schumacher, 1981). Vowels may be most difficult to learn because of the irregularity of their letter/sound association. Any single vowel symbol may represent twenty to thirty different sounds, depending on placement of the vowels in a word (e.g., go, got, open) or the letters surrounding the vowel (e.g., or, one, collar, ought). The relative lack of clarity or distinctness of vowel sounds may also be a cause of learning difficulties.

There is no clear way of lessening these difficulties presented in learning vowels. However, the fact the succeeding ABRs do not need to know vowels to decode a word helps pinpoint the learning need: a strategy.

Rationale For Phonemic/Syntactic Strategy

Succeeding ABRs deal with unknown vowels by varying the vowel sound, and it appeared possible that this strategy could help non-succeeding ABRs. Several approaches to teaching this strategy to ABRs were considered and evaluated:

1. Because succeeding ABRs simply used a variety of vowel sounds for any given vowels, an attempt was made to get ABRs to imitate this strategy. All short vowel sounds were taught

and teachers provided practice in trying all these sounds when encountering an unknown vowel. This was tried with six ABRs and proved unsuccessful; ABRs had as much difficulty learning this set of vowel sounds without letter associations as they did learning letter/sound associations. Moreover, when sounds were learned with symbols, ABRs were very concerned with using the correct sound.

2. Because succeeding ABRs had flexibility in approaching the vowels; flexibility in use of the vowel and word patterns was taught by teaching sets of phonograms, varying the vowel (e.g., bat, bet, bit, bot, but). This was tried with six ABRs but this did not promote flexibility needed to vary the vowel. Moreover, it was soon apparent that this approach would have demanded extensive teacher-directed lessons before ABRs could relate this information to a self-instructional strategy.

The teaching of a series of vowel sounds and word patterns involved too much information. The amount of information had to be reduced. For this reason, it was decided to teach one sound to replace all vowel sounds. This would produce, in many cases, a non-word. However, this was considered an asset because 1) students would have to manipulate the non-word, and would therefore, vary the substituted letter; and 2) students would tend to use syntax and context to obtain a meaningful or correct word.

Several questions had to be answered before this was attempted. These questions were answered by trying different procedures in several small pilot studies with ten to twenty ABRs.

Question 1: Could ABRs identify an unknown word if the vowel sounds were distorted? A set of ten sentences were developed. The vowel in one word in each sentence was changed. Example: I can't fend my hat.
He is a good chald.

Sentences were read to twelve ABRs. All ABRs were able to identify at least nine out of ten distorted words.

Question 2: Which sound should be used? The most unobtrusive vowel sounds are the short vowels, and the most unobtrusive or indistinct of these for the field test region (southeast) were considered to be /e/ and /i/. Short /e/ and /i/ are rendered alike in the local dialect, and /e/ was aribitrarily selected. Despite the fact that long vowel sounds are intrusive it was recognized that simply naming the vowel or spelling out the entire word might be easier for ABRs. Therefore, to determine the potential effectiveness of various approaches, twelve ABRs were tested, using words in isolation and context. ABRs were given new words to decode using three approaches: 1) they were asked to spell the unknown word, 2) say the vowel name of the unknown vowel, or 3) give /e/ as a substitute for the unknown vowel (e.g., both was rendered /b/ /e/ /th/). When words were in lists, eight ABRs did better, or as well, with /e/ as the other approaches. Eleven of the ABRs did well or better with /e/ when this was used with words in context. The less intrusive sound worked best.

Question 3: Could ABRs identify the vowel? If this strategy were to be successful, ABRs would have to know which letters were vowels. A pretest was given to twelve ABRs to determine if they had a sense of vowels in words, or could name the vowels. ABRs were given ten printed words, with a blank for the vowel (e.g., h_t). The teacher read the word for them and asked them to put in the missing letter. Next, they were presented with letters of the alphabet in scrambled order and asked to underline all vowels. Three of the twelve ABRs could not identify the vowels or put consonants into vowel spaces (e.g., they rendered c_t, cft). It was recognized that

these ABRs would be unable to use the /e/ strategy, and a pretest was developed to screen out ABRs with similar limitations.

Question 4: Would ABRs use the /e/ strategy? It was expected that ABRs would be concerned about using the correct sound. This did occur, as field notes below indicate:

> Martha is concerned about using /e/. She uses it in reading, He is sick, as He is sek, sick. Then says, "It doesn't make the (the vowel) sound like /e/ though. (OBS: It is as if she expects the /e/ to change the word, the fact that she can and did finally render the word correctly did not seem relevant to her). (11/12/81)
>
> Brad was able to use the /e/ strategy, but when asked if he would use it, said, "It still don't tell you the word so it's wrong." (11/12/81)
>
> I asked Ted (after he successfully used the /e/ strategy) if it helped. He said, "Truthfully, I've been with the phonetics for several years and they just don't connect to me." (11/18/81)

The conclusions drawn from this data were:

1. ABRs can be more successful using a vowel replacement.
2. The most feasible vowel replacement was /e/.
3. Adults could readily manipulate a vowel in a distorted word to get a word which made sense in context.
4. Not all adults could use the strategy since not all could recognize a vowel.
5. Adults would resist using /e/ since it was not "correct".

It was apparent that using /e/ to replace vowel sounds was an effective strategy that was not likely to be used unless it was possible to convince

ABRs that the use of the /e/ strategy was right. Thus, in teaching the strategy, emphasis was placed on the fact that the ABR did know much of the word and could successfully guess the word.

The /e/ Strategy

In teaching ABRs to use the /e/ strategy, three constraints were recommended:

1. It was a strategy for use with unknown words.
2. It was a strategy for use with text, not word lists.
3. It was to be used in conjunction with "thumbing".

The /e/ strategy included three steps (Boraks, 1982b). When the ABR met an unknown word they were to:

"Thumb" through the word,
Say /e/ for the unknown vowel,
Reread.

Success was evaluated in terms of students' ability to use this strategy to decode unknown words. As with the segmenting strategy, blending was a problem. The use of /e/ had to be consistently prompted and the success in use of the strategy seemed to hinge upon convincing the ABR of its value. All twelve ABRs taught to use /e/ could use it and decode unknown words, with teacher guidance. Reluctance to using the strategy had to be overcome by repeated prompts and by encouraging the students to select their own replacement vowel. To promote independent use of the strategy, continued modeling and reminders of the effectiveness of the strategy were clearly needed and guidance for this were included in the final module (Boraks, 1982b).

Graphic Cues

ABRs rely heavily upon visual or graphic cues when learning or attempting to identify new words (Boraks, 1978; Boraks and Schumacher, 1981). The reliance on graphic cues may be due to problems in the use of other cues. That is, ABRs may reject phonemic (sound/symbol) cues because of auditory deficits, or a failure to understand instruction in sound/symbol relationships. While specific strategies can help ABRs overcome these problems, it is also appropriate to help them to make more effective use of graphic cues. It has been suggested that ABRs misuse of graphic cues may be due to a lack of analytical skills, or visual organization skills. It is apparent that ABRs have ineffective habits of visual search and visual processing of new words (Boraks, 1978; Boraks and Schumacher, 1981).

Roadblocks To Use Of Graphic Cues

ABRs can be helped to analyze words more systematically by using the "thumbing" strategy discussed above. However, this strategy will not promote visual organization or the processing of word units or clusters. Boraks (Boraks and Schumacher, 1981) points out that ABRs' miscues and comments indicate that they <u>can</u> but <u>do not</u> habitually visually organize letters into units or clusters. In fact, ABRs who tend to use the first and last letters of words as identifiers; often note that one word looks like another word (rarely do they say "sounds like" another).

Moreover, Boraks points out that these same ABRs appear to seek letter clusters within longer words (Boraks and Schumacher, 1981, pp. 61-69). In addition, a review of the ABRs' miscues collected by Boraks and Schumacher

(1981) indicates that even failing ABRs rarely miss compound words. These ABRs seem to try to seek patterns in the first syllable of longer words. With the longer words ABRs would not attempt to use only the first and last letter as word boundaries or identifiers, but would try to examine the first syllable as a unit. Thus, while tan might be rendered train or nat, terrific would be rendered terfor. This suggests that just as ABRs have sound/letter associations they do not use, they have visual organization abilities they do not tap. The way to tap these visual organization abilities is suggested by examining the experiences of ABRs who do seek patterns. Most ABRs who had been exposed to instruction in syllables or polysyllable words, tended to seek letter clusters even in smaller words (Boraks and Schumacher, 1981).

It appears that the development of habits of visual organization in ABRs may be inhibited by the consistent presentation of one syllable or short words. Specifically, the roadblock to use of graphic cues then appears to be a result of limiting exposure to simple, single syllable words. It is ironic that the very approach meant to clarify word patterns for ABRs may in fact be inhibiting the recognition of patterns.

Rationale For Spelling/Cluster Strategy

Juola (1980) suggested that readers may process long and short words differently. For ABRs, this certainly appears to be true. It is suggested here that if ABRs were consistently presented with polysyllable words, they would process words more effectively.

Promoting a search for letter clusters or orthographic regularities would seem a viable way to increase effectiveness in using graphic cues.

Thus, while Juola, et al. (1979) indicate that research has not clearly defined the perceptual unit for the beginning reader as either the letter, letter cluster, or the whole word, these researchers conclude that "word identification depends on the development of visual processing skills that make use of orthographic regularities" (Juola, et al., 1979, p. 105). ABRs who focus upon single letters will not seek these regularities. The tendency of the unsuccessful ABR to avoid the vowel suggests that teaching of phonograms (word families) will not promote a search for graphic regularities in short words.

Vernon suggests the opposite, noting a relationship between reading achievement and visual organization Vernon pointed out that children who are poor readers tend to be ineffective in visually analyzing complex structure (p.399); and in developing an image of the word structure (p. 400). Then Vernon (1977, p. 402) concludes that the discovering of invariant patterns can be promoted by the teaching of phonograms (word families). This does not appear to be appropriate for ABRs who focus upon letters in short words and units in longer words. It appears that any strategy which would promote ABRs' visual organization abilities might best be based upon the use of polysyllable words to promote a search for longer units (i.e., syllable) within a word.

The use of the syllable as the initial unit of instruction has been suggested by Rozin, Poritsky, and Sotsky (1971); they point out that the syllable is less abstract than the single phoneme or grapheme. Friere (1970) used the syllable as the unit of analysis with Spanish speaking ABRs and Cunningham (1975-76), has claimed success with an approach which which

has learners compare and contrast syllables. An instructional strategy with a focus upon syllables would apparently 1) be less abstract than a single letter strategy, 2) promote a need for visual organization, and 3) be similar to these successful strategies.

However, the programs suggested by these authorities while promising, would be inappropriate for the ABR simply because they would require a "program" or distinct approach or materials. The goal here is to overcome the roadblock with a self-instructional strategy which could be easily incorporated into existing programs and materials. The simplest way to overcome the ABRs' roadblock to the use of graphic cues appears to lie in the initial use of longer words. This could require teacher selected word lists.

How can teacher selected word lists be incorporated into a self-instructional strategy for ABRs? The guidelines for use of a strategy discussed earlier actually helped identify a solution. These guidelines indicated that strategies must accommodate ABRs' expectations on how, as well as what, is to be learned. Boraks indicated that many ABRs want to learn to spell, and clearly feel they can learn to read by spelling (Boraks and Schumacher, 1981). Developing a visual organization strategy around a spelling approach would make it possible to capitalize upon the ABRs' desire to learn to spell.

There were three potential problems with this:

1. Teacher guidance in the selection of polysyllable words would be needed.
2. The sound/symbol correspondence of English orthography (spelling system) is irregular.

3. ABRs currently have problems with spelling as a word identification strategy. That is, even ABRs who know letter names frequently do not render orally the correct letter names when spelling out a word (e.g., right may be rendered r-e-t-h-g; bet as b-o-t).

Solutions to each problem were considered. There was no way to overcome the important role teachers would have to play in initiating this strategy. However, the teacher's role was simple and not overly instrusive, as they would only have to identify three types or patterns of words (a one syllable, compound, and polysyllable word) and present these words each session.

There is a rationale for each word pattern recommended here. The one syllable word allows the teacher to use words in their current text and provides an apparently easy word for the ABR. The compound word is, as noted earlier, easiest for the ABR to learn. The polysyllable word triggers the ABRs' need to cluster or visually organize letters.

The sound/symbol irregularity of English orthography presents a problem which is more difficult to deal with. However, as Chomsky points out, when considered in larger units, English orthography is essentially regular because the underlying meaning or morphological units are often presevered even when individual letter/sound relationships appear to be irregular, as in courage; courageous (Chomsky, 1970, p. 9). Irregular orthography was therefore not considered a problem which had to be overcome.

The ABRs' tendency to misrender spellings is in fact a different problem than it appears to be because while ABRs often render an incorrect spelling, this rendering will often cue the correct identification of a word. However,

for the ABR, spelling out a word seems to be more a strategy for sequential analysis and "thumbing" is potentially more useful for this. The real problem is that individual spelling out of letters stresses individual phonemes not letter clusters. Consequently, while spelling out a word is suggested by Durrell (1980) as word recognition prompt for a child, and while adults tend to use and prefer this prompt (Boraks and Schumacher, 1981) some adaptation of this spelling approach is required if the goals is visual organization or patterning.

While the spelling focus would promote student interest and subsequent use of this strategy, it was unlikely that the visual organization aspect could be explained readily to students. Thus, the cluster strategy became for the students, a spelling strategy with a stress upon visual organization skills.

To guide this incorporation of visual organization into a spelling strategy, spelling strategies of succeeding and non-succeeding ABRs were evaluated. In a pilot study, fifteen ABRs were asked to write three words they could spell, then they were asked to explain how they learned them. Next, they were given three words to learn and observers noted carefully how they approached this task. Most ABRs said they learned a word by looking at it and saying the letters. This was what they frequently but not always did in practice; most ABRs would stare at the word and whisper the letters to themselves. Some ABRs would spell the word again and again to themselves but not repeat the word after each spelling. Later these adults would look at the word and point out that they knew it but could not think of it. That is, the association of letters and word was lost. The main

difference between spelling strategies of succeeding and non-succeeding ABRs was that succeeding ABRs would occasionally whisper the word to themselves when writing it out during the test. Greater differences were found in children who were good and poor spellers. For example, Russell (1937) compared children who were good and poor spellers and found good spellers were more active in seeking clues in the forms of syllables (p. 76). Russell reported that both good and poor spellers had an average of 3.3 strategies. In the present pilot study it was found that most ABRs had only one strategy thus, actual spelling behavior of ABRs provided little insight into a potentially useful strategy.

Guidance for steps for a visual organization/spelling strategy was then sought by examining current teaching of spelling practices. Allred reviewed the research on teaching spelling and listed the following as the most effective study sequence:

1. Say the word
2. Look at each part carefully as it is pronounced
3. Say the letters
4. Attempt to recall the spelling to oneself
5. Write the word
6. Check
7. Repeat if needed (Allred, 1977, p. 24)

Seven steps were too lengthy for a child and would be too lengthy for even the adult learner. However, it appeared that certain steps which enhanced meaning, letter clustering and active learning would be helpful for the ABR learning a word.

The fact that the steps listed by Allred were distilled from research on children was of some concern despite the fact that the learning steps were considered secondary to the selection of words. That is, it was not

clear that the spelling steps when used with pattern words would, as desired, facilitate acceptance of the strategy and use of visual organization. Therefore, these steps were carefully evaluated in pilot studies, where the use of various meaning cues, word clusters, and physical cues were manipulated. The pattern of words (one syllable, compound, polysyllable) was held constant in these studies.

The first spelling cluster strategy developed employed a sketch representing the word. It was felt that this picture would provide a strong meaning association for ABRs (Ehri, 1979). "Thumbing" was used to prompt the clustering of word units or syllables, and the ABR was asked to write and check the word to provide active, overt feedback. This approach was tried with twelve ABRs. It did not work. As with the use of pictures in the segment strategies, the teachers did not like sketching the words and often had difficulty developing a simple sketch for each word. Moreover, ABRs tended to tease teachers about the quality of the drawing or to use the most concrete association for the sketch. For example, if a man running was used to represent run, they would remember man, not run. In addition, with this approach, ABRs and teachers alike tended to focus on individual letters, not units. A new approach was needed.

A second strategy was developed and piloted using some of the same ABRs. With this approach, ABRs were asked to use the word in a sentence, say the word and a word which rhymed with part of the word or the whole word, and to write the word on blanks provided.

The rhyming word was used to promote patterns (Ehri, 1979), however, ABRs' difficulty with rhyming words is exemplified by the field notes below:

Ted could not give a rhyming word with the lesson. Rather than rhyming words, he seems to categorize words. For example, he said foot which he spelled fool rhymed with feet. The one rhyming word he gave was for the word side; he said it was decide which he spelled deside.

(3/5/82)

ABRs also had difficulty copying a word correctly on the first try. The sample renderings below indicate that for the ABR processing letters in sequence was a problem.

Word	ABR Copies
football	fodlb fotbl
economy	econly a-n cononmin
happening	happing, happeing, happnig
friends	frie, friedes
bus	bull, ball
house	hoose, hosner

This second strategy also had to be refined. A third strategy familiar to many teachers was tested. ABRs were asked to use the word in a sentence, "thumb" through the word, cover it, copy it and check it. This was done three times, then the word was to be used in a sentence. This strategy was tried with fifteen ABRs.

This third and final strategy was considered successful because all fifteen ABRs accepted and demonstrated more graphic awareness and clustering when using this approach as the field notes below indicate:

When I walked in the door at 8:45 this morning, Gordon was waiting for me. The spelling procedure and the success he met with it yesterday had really motivated him. The teacher's comment was, "I don't know what you did with him yesterday, but it sure was right, and turned him on." He remembered most, ball and coffee, the three words we worked on yesterday.

(3/4/82)

Jim didn't know the word control. I said it, then he thumbed it using sounds and then syllables. He looked at the word awhile before he tried to write it. He wrote con, stopped, thought and then wrote trnl. He had some trouble making the 't' (but got it) and when he checked he realized his mistake and changed the n to o. The second time he wrote contr l. He left a space for the o. I said the word over for him and he still didn't get it. He then checked and saw it was the o that needed to go in the space he'd left. The third time he wrote it correctly. He wrote cont very quickly and then stopped. He thought awhile and then wrote rol.

(3/4/82)

Spelling/Cluster Strategy

Two further changes were made in the strategy after field notes were reassessed, and after limited feedback was received from ten state pilot teachers. This feedback made it clear that the unique feature of the strategy (use of pattern words) would have to be stressed if teachers and ABRs were to recognize the importance of the strategy. For example, many teachers said they used easier words in order not to frustrate ABRs and because they believed these words were easier to spell. Therefore, the use of an acceptable (spelling) focus for ABRs became a misleading focus for teachers. This was dealt with by changes in the teaching module (see Chapter III) and by having students underline letter clusters instead of--or while--"thumbing". The physical identification of letter clusters was to serve as a

signal to teachers of the purpose of the strategy and also was easily translated into a student strategy.

The final steps and related rationale are explained below for the student strategy:

Step One: Use the word in a sentence.

Rationale: This helped avoid a mishearing of the word. Saying the word also helped avoid problems ABRs had with learning a sequence of letters without the related meaning association. Moreover, the initial emphasis on meaning would promote use of semantic cues. As Colheart (1977), explains, the manner in which a word is initially learned or analyzed (i.e., whether for graphophonic or semantic features) influences the way the word is recalled.

Step Two: Underline each word part or cluster.

Rationale: This promoted physical delineation of letter clusters and sequential processing of letters.

Step Three: Write and check the word.

Rationale: This provided the overt feedback needed to check visual processing.

This strategy was different from the segmenting and variable /e/ strategies because the focus was on a strategy for learning versus identifying a word. It was expected that visual organization skills would be enhanced with the use of the strategy and would transfer to visual organization of larger word units. Further research is planned to determine the time it takes for this transfer to impact upon measurable reading gains. Currently, it is known that ABRs can and do use the strategy readily and as a result tend to process words in larger clusters when using it.

Semantic Cues

Many reading theorists have pointed out that syntactic (sentence structure) and semantic (context) cues are the most powerful word recognition cues (Goodman, 1965; Smith, 1975). It is true that readers can predict an unknown word with great accuracy using their sense of sentence structure and understanding of the context of a passage. For example, a reader seeing the sentence, "Jim put on his coat because he was ____," would easily be able to guess that the word cold fit in the blank.

Roadblocks To Use Of Semantic Cues

Boraks (Boraks and Schumacher, 1981) points out that semantic cues are rarely used by either succeeding or failing ABRs. ABRs make as many miscues at the end of a passage as at the beginning perhaps because for the ABR, the goal in reading is word identification, not meaning. Consider the field notes below:

> While Carol was reading, she didn't seem upset when she couldn't figure out a word. She just went on. She said at the end that she didn't feel she'd done well because she didn't know every word. We talked about this and I said I didn't expect her to.
>
> She said she'd cheated a little because even though she didn't know every word, she could still comprehend it. We talked about this and that this wasn't cheating--that even though we didn't know every word that we got meaning clues from those we knew. She did not seem to believe this.
>
> (3/3/82)

There are several reasons why ABRs do not read for meaning: 1) the teacher/text orients them toward word identification, 2) the meaning of a

passage is elusive if non-concrete, non-familiar concepts are presented, and 3) ABRs apparently expect that concepts in print will reflect personal experiences (Boraks and Schumacher, 1981).

Similar problems have been suggested by Whyte (1981). Whyte studied adults in Northern Ireland and focused upon language-based prerequisites for learning-to-read such as ability to categorize, interpret metaphor, use of concrete/abstract language, cognitive integrative skills and ideational fluency. Whyte compared ABRs with Level II and Level III readers. She found ABRs had different classification strategies, preferred concrete referents, and had problems with getting the central theme.

The types of problems adult beginning readers have with meaning can be delineated by examining typical incorrect responses made to questions relating to this accident story:

STORY

An Accident

Yesterday there was another car accident on Main Street. My brother Joe and I saw it. We were talking about getting a new car. Then this man dashed by us. You could tell he was really mad. He jumped into his car and pulled right out into the traffic. Joe yelled, "Look out!" But the man wasn't thinking about driving. He drove right into two cars. One lady was hurt. This is how many accidents happen.

Below in Column I are questions asked by the teachers, Column II presents typical ABR responses, and in Column III presents an analysis of the related comprehension problems.

	COLUMN I Question	COLUMN II ABR Answer	COLUMN III Problem
1.	What was the story about?	"A new car. I'd like to get one." (Adult goes on about problems he had had with his car).	This person is over-personalizing. What is reported is what he is concerned with, not with the main point of the story.
2.	Why do most accidents happen?	"...because mechanics do such a terrible job."	Often adults relate questions not to the actual story but to their own lives. Story events and personal events are not compared, they are confused.
3.	What point was the writer trying to make?	"About an accident, there are lots of accidents down on Broad."	The event (an accident) and the point of the story are confused here. The adult responding has trouble dealing with themes, or the moral of the story.
4.	What did Joe do in the story?	"Drove into two cars."	When there are more than two people in a story, adult beginning readers often mix-up their roles and actions.
5.	Look at the sentence "You could tell he was really mad," who is he?	"Joe."	Adults have problems with referrant words, or words like he, his, they, them, etc.
6.	Read the first and last sentences in the story.	"Yesterday there was another car asid on Main Street. This is how many co,acop happen.	If the ABR had been reading for meaning, the word accident would not have been missed at the end of the story.

One way to deal with the overpersonalization and focus on the concrete demonstrated here would be to use only material from the ABRs' personal experiences. However, while it might be appropriate initially, this approach, if continued, would accommodate limitations but not expand ABRs' abilities to abstract or generalize.

Schema theory presents a framework for understanding the focus of the ABR upon decoding the personal and concrete. According to the schema theory, meaning or information is processed according to a person's background of experiences. That is, readers have a cognitive structure of mind-set processing text and mind-set influences what and how the reader understands (Tierney and Mosenthal, 1980).

If schemas or mind-sets for processing text are established through experience, what experiences dictated the ABRs concrete, personal approach to text? Both schooling and print experiences would have established a mind-set for the general or abstract. Yet the fact is, ABRs have had minimal schooling and minimal contact with print. Both schooling and print may have been physical aspects of the ABRs' environment, but the ABR who once "tuned out" school experiences now tunes out print. The ABRs mind-set or personal, concrete focus seem to have been dictated by experiences limited to their present personal life.

Scribner and Cole (1981) considered this view, that literacy and schooling impact on cognitive skills, as a radical view. They question the idea that "...mastery of written language affects not only the content of thought but the processes of thinking--how we classify, reason, remember" (p. 5).

However, these researchers found evidence that schooling (which was not synonymous with literacy) did impact on oral recall and logic (Scribner and Cole, 1981, p. 132). Certainly the ABRs' response to text parallels descriptions of unschooled people (Freedle and Duran, 1979). Both groups responded with reference to the concrete and to personal experiences and rarely with reference to abstractions and generalizations. Schooling does provide the opportunity to deal with the abstract and non-personal whereas discussions in the daily life of the ABR may tend to focus upon the personally relevant and concrete. Whatever the case, ABRs clearly have the ability but not the propensity to process abstract ideas and to read for meaning. That is, when teachers provide direction or a mind-set to read for meaning, ABRs will use more semantic cues (Boraks and Schumacher, 1981). Unfortunately, even with teacher presetting an orientation of reading for meaning, ABRs still overpersonalize and focus upon the concrete to a great extent.

Rationale For Semantic Cue Strategy

Mind-set, whether set by teacher or experience seemed to be controlling ABRs' limited use of semantic cues; therefore, a strategy which would help ABRs establish for themselves a different mind-set is clearly needed. Specifically, a strategy which would help ABRs depersonalize and deal with abstractions is needed.

There, at first, appeared to be a conflict inherit in this goal requiring depersonalization and the general guideline dictating that strategies draw upon the ABRs' experience. However, it was apparent that if one step of the strategy drew upon ABRs' experiences and a second step expanded upon

these experiences, both guidelines could be met. A third step could be used to help ABRs deal with abstractions.

In developing this strategy the first goal was to find a way to tap personal experiences. The simplest way to tap personal experiences is to ask for association to the topic under discussion. This is a familiar strategy, sometimes called developing word trees or semantic mapping. With this strategy, a stimulus is presented, students generate associations to the stimulus word, and associations are placed in categories.

Semantic mapping is usually seen as a way, albeit not the most effective way, to develop vocabulary because words presented together are likely to be recalled together (Gipe, 1978-79). However, the goal here in using semantic maps is to draw out personal associations in order to clarify how the ABR is inclined to instantiate or use known concrete referrants to interpret concepts presented in the text. The ABRs' associations would clarify their pre-existing knowledge structures or schemas which they might ordinarily use as a basis for processing text (Anderson, et al., 1978).

If words are to be generated, there must be a key or stimulus word to be used to initiate associations. Initially, in this study, selection of key words was guided by two needs: 1) to start with a word which would call up experiential responses, and 2) to promote dealing with non-concrete aspects of text. However, as the ABR responses to text shown earlier indicated, referrant words cause the most trouble. To help overcome this, a referrant word was selected as one stimulus word. It was assumed that in the process of generating associations for referrant words, ABRs would be alerting themselves to related referrant words and phrases and thus experience less

confusion with these terms. For referrant words, adults were asked to generate ways of saying, "Jim's car" (e.g., the car of him, his car, that man's car).

These three stimulus categories were tried with eight ABRs. The goal was to determine the effect of developing word trees on subsequent comprehension of referrants. ABRs did fairly well in generating associations to concrete words, less well with abstract words, and had tremendous difficulty with referrant words. Moreover, ABRs, when using this approach prior to reading did not do better identifying referrants within the text. The few ABRs who were able to generate referrant word trees did not do better identifying referrants within the text as these typical field notes indicate:

> Dan did okay with the referrant word associations. At least he knew what I was talking about. But when Dan tried to answer questions about the referrants (within text) he got mixed up. (5/24/82)

This made it clear that attempting to clarify referrant words in this manner was not productive. The use of stimulus words to promote personalized and then depersonalized associations was evaluated. To provide experience with both concrete and abstract concepts; both a concrete and an abstract word were used. Eight ABRs were asked to provide associations to a concrete word. ABRs had little difficulty responding, and as expected many responses were personalized. ABRs responded well to concrete words, less well to abstract.

The next step was to seek a way to distance the ABR from their personal associations. The development of this step leading from general associations to depersonalization was prompted by an analysis of ABRs associations. Boraks and Schumacher, 1981 found ABRs when asked to give

an association to a stimulus word, would most often give a phrase, a rhyming word, or a syntagmatic response, e.g., for up they would say stairs. Most successful readers give categorical or paradigmatic responses (e.g., for tall they would say big). Brown and Berko (1960) point out that these paradigmatic responses seem to be the result of the learner organizing vocabulary or concepts into classses or parts of speech (i.e., categories). It appears ABRs are not doing this. However, ABRs can be taught to give categorical responses; moreover, Dinnan at the University of Georgia has suggested that teaching this helps enhance reading achievements. The question was how to promote a categorical, non-personal response.

There were a number of categorical responses ABRs might be prompted to give to a stimulus. To the stimulus chair, ABRs might be prompted to state its use, a synonym, a feature, or so on. However, one type of association would tend to draw the ABR away from the initial personal associations: the antonym. Moreover, generating antonyms would prompt comparing and contrasting of words. It was thus assumed that when antonyms were generated, the focus or perspective of the ABR would be changed or refined. For these reasons, the planned second step after associations were generated was to have ABRs give the opposites to these words.

To determine if ABRs could in fact be taught to generate opposites to stimulus words, a pilot study was undertaken. Eight ABRs were given two stimulus words (concrete and abstract) and asked to generate a semantic map (associations); then they were asked to give the opposites to these stimulus words and then generate related associations. Again, ABRs had little difficulty generating associations to the concrete stimulus key word. As

expected, most associations were affective, reflecting personal experiences. For example, responses to work were: getting off, tired, hard to find. ABRs did have difficulty generating opposites, as the field notes below indicate:

> For opposites to the concrete words, most of the responses were more than one word. For example, for trip, Mr. P's response was "stand still" and not "going anywhere."
>
> I asked Mr. P to give me an opposite for work. He could not. I suggested lazy. He said that laziness is almost to feel you can catch laziness from hanging around with lazy people. I did get one response from him concerning lazy. The word he gave me was handout. He really feels that that's all lazy people want is a handout.
>
> (5/18/82)
>
> The word beach party was much easier for her than the word friendship. Mrs. K gave the words for beach party readily. The words for friendship came harder. She answered in sentences or phrases rather than in one word answers. She said, "A friend indeed is a friend in need." When I asked her for opposites, she gave me responses related to the first word rather than the second. I had to do a lot of leading and proding to get any answers.
>
> (5/19/82)

Because generating opposites was difficult, an adaptation to make the generating of opposites easier was sought. Heidenheimer (1975) posited a hierarchy of processes for opposition and indicated that opposition is preceded by negation. That is, prior to stating bad as the opposite of good, a child will say not good. Heidenheimer (1975) further suggested that the use of a phrase or need for extended thinking time to respond with opposition reflected that the child was searching for a concrete referrant or a

"concrete extension to carry meaning" (p. 761). It was not assumed here that ABRs' phrase or concrete response suggested they were in a transition stage from negation to opposition. There is a difference between the children used in Heidenheimer's study and ABRs. Even six year old children can generate antonyms and the basic abilities of ABRs exceed this; it is assumed here that the mind-set to deal with personal experience rather than a search for concrete interfers with calling up categorical associations. However, to make generating opposites easier, this transition step was employed as a prompt in a pilot study with six ABRs. These ABRs were asked to consider each word in the initial word tree and say, "This is not ____, it is ____." With teacher guidance ABRs were successful with this strategy. However, while ABRs did improve after several lessons it was clear that teacher direction would be needed to help ABRs generate several associations and opposites.

As field notes above show, both initial associations, and antonym semantic maps inevitably called up personal associations. Despite this, it was assumed that if two sets of associations were generated, the ABR would be less likely to have a fixed or closed mind-set for reading. A shift in initial perspective would at least still be achieved. Consequently, these steps were considered a viable basis for generating meaningful and depersonalized associations.

To determine if these steps would promote some depersonalization when actually reading text, another small pilot study was undertaken. Six ABRs were given two stories and a related set of questions. Stories were read under two conditions: 1) ABRs were asked to read one story, retell it and

answer questions, 2) ABRs were asked to generate word trees and opposites for the second story using an abstract and concrete word, then they were asked to read the story, retell it and answer questions. ABRs' responses under the two conditions did differ. When word trees preceded reading, more text related information was recalled and more semantic miscues occurred. However, in both conditions, ABRs continued to have difficulty with abstractions. Generating opposites apparently had more of an effect on depersonalization than on generalizing about text.

To promote the ability to generalize or deal with abstractions, it was decided to add a third step; ABRs were asked to posit a relationship between word trees and to read to decide which word tree best related to the text. The strategy was now a four step approach where ABRs would: 1) generate associations, 2) generate opposites, 3) posit a relationship (between word trees), and 4) read to decide which word tree went best with the story.

Potential difficulties with the last step were anticipated. Horn and Donaldson (1980) summing up research on the adult learner almost seemed to predict failure for this step. They state:

> The evidence for aging loss at several levels of functioning suggests that decline of intelligence in adulthood is characterized by loss of ability to comprehend possible relationships among items of information, to form the best possible organizations of information, to form concepts, and to draw the best possible implications. These inabilities show up primarily when the established concepts of a culture or cultural aids cannot be used effectively to solve a problem. The inabilities may be due to a loss of capacity for maintaining close attention to features of complex problems particularly when attention must be divided between several aspects of a task.
>
> (pp. 492-493)

Yet as stated earlier, it appears to be the habit of seeking and understanding relationships, rather than the ability to do so, that ABRs' lack.

The four step approach was tried several times with seven ABRs. ABRs were able to follow each step with teacher direction. Some ABRs had difficulty answering questions about the story and responding to the initial questions (i.e., which word tree best represents the story). As one ABR said, "I can only think of one thing at a time." However, with prompting, ABRs were able to respond to story questions and to answer, with somewhat greater but limited facility, abstract questions. The key difference was that students using this strategy used more semantic cues, showing that they were reading for meaning.

The multiple steps of the strategy, need for teacher prompting, and related gradual improvement suggested that while this was a viable teacher strategy, it would be a cumbersome student strategy. However, there was a reluctance to abandon the strategy completely for two reasons: 1) these steps seemed to deal directly with the needs of ABRs, and 2) ABRs gradually improved with repeated practice. Consequently, these steps were retained as a teaching strategy and a different approach for a student strategy was sought.

For the student self-directed strategy, steps were simplified and three steps were planned; students would be asked to 1) select a key word from the story and think of associations, 2) think of opposites to these associations, and 3) to picture the story events as they read. Picturing of events would promote attending to text or meaning and is considered an effective strategy for enhancing attending to meaning.

This simplified approach was tried with six ABRs, again under two conditions -- reading preceded with or without the strategy. ABRs readily followed the steps, recalled more of the text and used more semantic cues on reading with the strategy than without it.

Unfortunately, ABRs, when using this student strategy, still had difficulty with abstractions. This reinforced the decision to encourage teachers to use the initial set of steps which might gradually increase abilities or habits of abstracting and to suggest the student strategy to promote depersonalization, enhance recall, and enhance use of semantic cues.

The use of a different teacher and student strategy was considered necessary for another reason. ABRs were able to use the simplified strategy as a self-guided strategy but seemed reluctant to do so, as the field notes below indicate.

> After I had modeled the strategy with the whole story, I started to retell the story. When I got about half way through the story, Jean stopped me. She wanted to know how I could remember the story just the way it happened. She really seemed to marvel at my ability to do this -- retell the story. She asked me if it was related to the fact that I could read. I told her that was part of it, but it was the TIP method (strategy) and this would help her to remember. She seemed to be so floored by my ability that she could think of nothing else. After my explanation I asked her to go through the TIP procedure when she read a story. When she started the story, she did not use the TIP procedure. She went through the story and read it as though I had said nothing.
>
> (6/15/82)

Thus, it was clear that much teacher involvement, repetition, adaptation, and prompting would be needed before ABRs would independently use this

strategy. The best encouragement was the actual evidence, to be constantly presented during teacher directed lessons, that the strategy worked. To insure this teacher reinforcement, one constraint was added to the strategy: students were to use this strategy only when they had read and failed to understand the text.

The Semantic Cueing Strategy

The semantic cueing strategy, labeled the meaning strategy was a multi-step process for teachers. Because this step could not be reduced to a one-liner, like "thumbing" or "say /e/", a rather awkward but useful acronym (TIP) was suggested to promote recall of each step. Teachers were to select one abstract and one concrete word then have adults:

1. T - Tell similar associated words
2. I - Say what each word is not
3. P - Present or posit a relationship between the resultant word trees

Finally, where needed, adults were to read to determine which word tree would best represent the text.

The student strategy also included three basic steps and used the same acronym. This strategy was to be used for rereading when the meaning of the story was unclear. Adults were to select one word telling about the story, and:

1. T - Tell or list similar associated words
2. I - Say what each word is not

3. P - Picture each sentence of text as they read

(Boraks, 1982d)

With the teacher-directed approach, ABRs were able to gain in ability to generate associations and opposites to use semantic cues, and showed limited gain in dealing with abstractions. With the simplified student strategy, students had a self-generated meaning orientation, and as a result used more semantic cues. Again, there was no increase in ability to deal with abstractions.

Summary

Roadblocks to ABRs' use of word recognition cues were identified. In designating important roadblocks, problems which inhibit use and integration of use of each of the four major word recognition cues were identified. Strategies which would remove these roadblocks were developed. Development was guided by principles of learning. Research and feedback from local and state piloting provided further guidance for adopting strategies. Strategies were finalized when local ABRs demonstrated that use of each strategy enhanced the use of the related word recognition cue.

CHAPTER III

MODULE DEVELOPMENT

Nancy Boraks

The strategies developed to help ABRs overcome roadblocks in learning-to-read were to be presented to teachers in the form of modules. The modules were to provide adult basic education (ABE) teachers with information on the use of the strategy in a self-instructional format. Based on suggestions from adult education consultants and ABE teachers, it was initially planned to include in each module:

a. Background information on the development and benefits of the strategy

b. An explanation of the strategy

c. A sample lesson plan

d. A critique of this plan

e. Opportunity for guided use of the strategy

f. A self-evaluation activity

g. Alternative ideas for varying the strategy (see Boraks, 1981, pp. 11-22)

These plans and modules were revised. Final modules included additional features in order to accomodate emerging information on effective guidelines for teacher instructional strategies.

Guidelines For Teacher Instructional Strategies

Guidelines for presentation of information to teachers were refined as the project progressed. These guidelines defined what information was to be presented to teachers, the form of that information and the form of the dissemination vehicle. Four new sources of information contributed to the development of the guidelines: a) empirical information on changing teacher behavior gained from an analysis of graduate students' use of the modules, b) information provided by adult education consultants, c) research on changing teacher behavior, and d) feedback from state field-testing.

Data from these sources indicated that changes in the initial modules in both form and content were required. The needs which dictated changes in the planned module are discussed below.

Need For Workshops

The initial plan to present information on the strategies to teachers in the form of written modules was reevaluated in response to the advice of adult education consultants. The consultants stated that teachers would need an opportunity to ask questions about these strategies. In addition, consultants pointed out that teachers would learn the strategies quickly if they had an opportunity to role play each strategy in a workshop situation. The consultants also emphasized that the workshops would provide the needed opportunity to convince teachers of the importance of both the strategy and their role in implementing the strategy.

These suggestions were in accord with research on changing teacher behavior, although in general this research has been considered inconsistent and deficient (Moburg, 1972). Rubin (1964) stressed the need to make teachers aware of the importance of their role, Pagano (1969) recommended that inservice or attempts to guide teacher change be open-ended and provide teachers with an opportunity to discuss related common problems. These recommendations could not be accomplished with written materials, so in lieu of the original plan of sending the modules to teachers, workshops were scheduled.

The workshops could not be initiated until strategies were developed and therefore, some other valid recommendations for facilitating teacher change could not be fully accommodated. For example, it is recommended that training be presented before teachers establish a mental set toward their students (Kasden and Kelly, 1969). Most ABE programs start in September. Modules explaining the strategies were scheduled originally to be disseminated on March 5, 1982 following the developement of strategies (Boraks, 1981, p. 18). This date was moved up to February 5, 1982, not only to enable those conducting the state field-testing to get an early start but to take advantage of the fact that some centers started new enrollments or a new semester in February.

An attempt was made to evaluate the actual need for these workshops, modules or a combination of both. To accomplish this, during field-testing one strategy (segmenting) was presented in workshop form with an accompanying module; one strategy (variable /e/) was presented in workshop form with only accompanying worksheets; and one strategy (spelling) was presented in module form alone.

Workshops consisted of a presentation of a brief rationale, a role-playing activity and discussion of the strategies. As noted above, at the workshop sessions, teachers were given a complete module for segmenting but only brief handouts to guide the use of the variable /e/ strategy.

Feedback from state field-testing indicated that both a workshop and module would be needed (see Chapter IV). To provide for this need, a sample workshop for presenting the strategy was included in each module.

Need To Strees Rationale

The need to clarify the rationale for the strategy was required by the principles of learning guidelines discussed in Chapter II. It was expected that the rationale would have to be clearly presented to teachers and students because both ABRs and their teachers learn and use information better when they understood the rationale (Havelock and Havelock, 1973).

Thus, the rationale for the strategy was originally presented as part of the sample lesson plan. Data from local field-testing of modules was evaluated to determine the impact of the rationale statement. Graduate students using these modules to teach the strategies to ABRs had taped (audio) all lessons. These tapes were transcribed and evaluated. Graduate students also observed each other teaching the strategies and took field notes focusing upon factors which led the teacher away from the use of the strategy.

Transcripts and field notes of these sessions demonstrated that the rationale for each strategy was rarely emphasized. Graduate students tended to immediately launch into modeling each step of the strategy.

However, the need to convey the rationale to ABRs was recognized, as one graduate student explained, "It doesn't matter how many times you use the strategy, but how much the student understands the logic of the strategy and believes in it."

In analyzing why statements of rationale were not used, several factors emerged. First, the initial statement of the rationale was too lengthy, the usual teacher/ABR dialogue tended to be less didactic, brief, more interactive. That is, the teacher would make a one-liner statement, followed by student one-liner, then a teacher one-liner and so on. The rationale statement as originally presented was not only too long (4-6 lines) but did not allow for immediate student comment. Therefore, it was changed so that it could be presented in segments, and thus promote student response. This was made possible by starting the lesson with a teacher analysis of student reading behavior, encouraging student re-analysis of this behavior, and relating the strategy to the behavior. In addition, as the teacher modeled, each step, the rationale for each step was reiterated.

Need for this repeated attention to the rationale was suggested by state field-testing feedback. For example, teachers across the state seemed to reject the variable /e/ module because they did not understand the rationale for the strategy (see Chapter IV). Also, teachers who did not understand the rationale for each strategy, tended to distort the strategy. For example, the spelling/cluster strategy was to facilitate visual organization or clustering of letters. One teacher adapted this by having students draw lines from each letter of the stimulus word to each letter of the copied word. This promoted a single letter focus.

Stress on the importance of the rationale as a framework for teachers in adopting the strategy also became evident during state field testing. For example, when the ABRs did not respond as expected, it was as one teacher said, "tempting to abandon the strategy and try something familiar." In some cases, the familiar strategy was effective, in some cases it promoted difficulty. The only way to insure that changes were in a beneficial direction was to insure that teachers understood the basis for the strategy.

Therefore, in the final module the rationale was 1) stated and clarified for teachers in an introduction to the module; 2) clarified in the lesson for students, 3) included in the teacher exercise section, and 4) stressed in the workshop guidelines.

Need To Reduce Innovation

Brim and Kagan (1980) have pointed out that while we are in a continued state of change, people, "want to change and remain the same.....to maintain their own identity and not change too fast or be changed against their will (p. 17). During the workshops, teachers stated (correctly) that the "thumbing" strategy did not seem very innovative and the variable /e/ too innovative. The concept that strategies must appear somewhat different or unique, but at the same time familiar or recognizable was advanced by consultants. Local and state field-testing confirmed the need to meet this apparent contradictory guideline. That is, the variable /e/ strategy, which required not just a new behavior but a change in old behavior, was resisted by state-pilot teachers.

It was clear that strategies must promote a somewhat new but not extremely changed behavior, be less innovative, and less complex Yet, strategies

were developed so that each incorporated known techniques with a slightly innovative variation. For example, the spelling/cluster strategies used familiar spelling teaching steps and required only a different focus for selecting words, thus, teachers could see this strategy as adding to, not changing current behaviors. The meaning strategy also presented a well-known teaching strategy (semantic mapping and visualizing) and added one innovative step (opposition).

Need For Pretest

In developing the strategies, it was evident that certain prerequisites were needed. For example, ABRs had to know a number of consonants if they were to use the segmenting strategy, and be able to distinguish between vowels and consonants if they were to use the variable /e/ strategy. This need was evident during the development of the strategies and confirmed by local testing. Consequently, pretests were included in the initial modules.

Feedback from state-testing was less conclusive and contradictory in terms of the need for pretests. Teachers stated that some ABRs who could not pass some pretests, could use some strategies. It was not clear how ABRs who could not identify vowels, could use the variable /e/ to replace the vowel. Despite the contradicting statements on the value of pretests, pretests were included in final modules, and it was suggested that teachers use these selectively. This was considered appropriate because a main concern of teachers in the workshop centered around which students could profit from the strategy. ABR teachers have been presented with a variety of suggestions on how to help ABRs and are somewhat cynical about the idea

that "one approach cures all." The pretest stressed that strategies spoke to specific needs of specific students. Pretests provided the teacher with a means to match the strategy with student needs. Pretests were considered important because they provide opportunities 1) to clarify prerequisite learning, 2) to clarify the need for selective use of the strategy, and 3) to enhance teacher diagnostic skills.

Need For Over-The-Shoulder Teaching

At the workshops for state field test teachers which were held in February, several teachers expressed concern about the amount of time required for teaching the strategies. It was estimated that it would taken ten to fifteen minutes to introduce each strategy and some teachers explained that they did little direct teaching and had only thirty seconds to a minute to provide directions for each student. The reason for this limited teaching time was organizational. These teachers had classes of ten to thirty students; some ABRs, but most Level II and Level III learners. Instruction in these classes consisted of assigning students materials and monitoring use of the materials. These students appear to be the ones who could profit most from self-instructional strategies but the time to introduce the strategies was minimal. Teachers needed a way to teach the strategies in the brief time available.

An analysis of the sample or model teacher-directed lesson (see Modules, Boraks, 1982a; 1982b; 1982c; 1982d) shows that most teacher time is to be spent clarifying the rationale for the strategy. The actual modeling of the strategy require only twenty to thirty seconds. As discussed earlier, the

focus upon the rationale is considered important and was even extended. If sheer repetition could have promoted learning, then ABRs would have been learning with current approaches and materials. The value of the strategies lies in the fact that student's perception of the reading and learning process is changed. Therefore, an abbreviated lesson would have to present the rationale for the strategy in some form. The module lesson could however, be adapted or shortened severly to provide for a brief, over-the-shoulder teaching opportunity. To do this, an emphasis is placed on modeling the desired behavior with a brief statement of rationale. It is expected that this lesson would be frequently repeated. At first, teachers would model the strategy for ABRs, briefly state the rationale, and request ABRs imitate the model. At the next session or teaching opportunity, the teacher would ask the student to explain how they had used the strategy and how it had not helped. Time permitting, the strategy would be modeled and imitated again. A form of this brief over-the-shoulder teaching was developed for each strategy/module.

Need For Flexibility And Structure

The consultant, local piloting results and research on change provided data suggesting that modules have both flexibility and a well-developed structure. This, as the teachers request for a strategy which was both familiar and innovative, seemed at first contradictory. The adult education consultants pointed out that teachers would adopt the strategy more readily if they could adapt the strategy to their own style and use it selectively. At the same time, consultants pointed out that teachers needed a model well-structured lesson so that it was clear to them what was to be adapted.

Havelock and Havelock (1973) reviewed research on change which affirmed this suggestion and stated that "self-initiated" change would generate the greatest commitment. This view was again confirmed by field notes and feedback from the local piloting. The aspect of each strategy appreciated by the graduate students who did the teaching was the flexibility. As one graduate student noted, "I like this because (I can) add touches which complement my teaching style and the student's learning style." At the same time graduate students were uncomfortable when the teaching guidelines were not specific. Moreoever, when guidelines were not specific, too much additional and often irrelevant information was added to lessons as the field notes below show:

Mrs. V:	Chair. But sometimes it doesn't sound like it says. Now chair sounds to me like 's' or 'c'.
Teacher:	Alright, okay. Chair starts with what we call a blend. Ch is a blend. Okay, you have chair, then you have chef, then you have character.
Mrs. V:	What is the sound of c?
Teacher:	The sound of c is /c/. The sound of ch is /ch/, but it does have exceptions as in character it sounds like k.
Mrs. V:	K, it do that.
Teacher:	And in chef it sounds like an sh.
Mrs. V:	Mm, hum, that's what confuses me and it makes me spell the word just the way it sounds, that confuses me.
Teacher:	Ch is one of these - alright this is one (points to word: church).
Mrs. V:	Church, church, church
Teacher:	Or I can put a vowel in there.
Mrs. V:	/ch/
Teacher:	Ch says /ch/
Mrs. V:	Sounds like an s instead of a c. And the sound of c is /c/.

(2/10/82)

On the other hand, a clear structure did work. When the teacher kept to the lesson or script, ABRs would render and attended to the correct response:

Teacher:	So the word is feet. I'll thumb through it for you /f/ /ee/ /t/, /f/ /ee/ /t/. Okay, do you think you can spell this word for me? Okay, I want you to give me the letters in that word.
Mr. K:	Foot.
Teacher:	Feet.
Mr. K:	F-e-e-t.
Teacher:	Alright, let's see if you got it right (thumbing).
Both:	(Sound out feet): /f/ /ee/ /t/.
Teacher:	Got it right didn't you?! Let's see if you can do it again.
Mr. K:	/F/ /ee/ /t/. Feet

(2/10/82)

When the guidelines seemed too specific, there was a reluctance to allow students to deviate, as suggested by the field notes of one graduate assistant:

> I am really frustrated. The thumbing through seems to work for some. Mrs. T seems to feel it is working. She does not thumb through in a normal way, she uses one thumb and covers the remaining part of the word. She does not cover up what she has already said.
>
> (2/11/82)

Thus, it appears flexibility could be promoted by suggesting some alternatives. This would accommodate student differences as the field notes below indicate:

> I asked Mrs. S to write a sentence for her word. Then I said, "I'll write it." She said, "I can do it." She seemed insulted.
>
> (3/18/82)

> The three words I gave Joe were bus, birdhouse, and control. He did not know any of the techniques we were going to use. As he did it I had to prompt him at each step. He thumbed the word bus, and when he learned the word he just looked at it. When he was ready I had him cover, write, check, and say the word. He spelled it correctly all three times. He started to write his sentence - wrote I, stopped, and said, "I don't think I can do it." I asked him if he wanted me to write it for him and what was his sentence. He said, " I ride the bus." I wrote it and then he wrote it.
>
> (3/18/82)

Both structure and flexibility were clearly needed. Structure was provided in two ways. First, in the sample lesson provided, each teacher step was delineated. Secondly, an activity was provided prompting role-playing of the exact teaching script. Flexibility was provided in two ways. First, alternative ways of teaching were provided in the module. Secondly, each workshop focused upon ways teachers would want to and could change the strategy to fit their own and their student's needs.

Need For Emphasis On Diagnosis

Teachers are more likely to accept change if they see a need for the change, (Havelock and Havelock, 1973). Teachers of ABRs often see the ABRs' failure as a result of poor attendance and attitude, but the problem is more often poor attending skills and/or inability to use known skills (Boraks and Schumacher, 1981). If teachers are to promote use of the designated strategies, it is necessary to convince them of the need for these strategies, that is to recognize the problems the strategies address. Thus, helping teachers use the strategies effectively requires diagnostic skills.

Many teachers lacked diagnostic skills, as feedback from local and state piloting indicated. For example, teachers often suggested that the strategies would work well for inappropriate groups. The variable /e/ strategy which assumed use of syntax and thus, a command of the language was recommended for foreign language students. It appeared that teachers simply wanted help with known problems, and for some of them suggested solutions were considered viable for any unsolved problem. Moreover, most teachers of ABRs do not have a strong background in reading and therefore would not be inclined to analyze the specific reading behavior addressed by the strategies.

There is a need to encourage teachers to monitor reading behaviors for additional, not just diagnostic reasons. Changes in behavior brought about by use of the strategies would have a high impact which might not be readily apparent. That is, a student using the meaning strategy would make more use of semantic cues, but some miscues would still be considered only as mistakes to the unsophisticated teacher. To the sophisticated teacher the change would indicate that the student was finally reading for meaning and on the road to improvement. Diagnosis of improvement would also be important for promoting student use of the strategy because frequently ABRs do not realize their own gains and leave programs as these field notes indicate:

> As we were going upstairs Mrs. P told me her brother Al had quit. She said he told her he wasn't learning anything. He saw no reason to stay if he wasn't learning. Mrs. P told me that she told him you don't realize you are learning until after you have learned it. She said she felt the learning kind of sneaks up on you and then it kind of hits you that it has happened.
>
> (3/18/82)

Teacher indication of improvement, moreover, must be valid, for students often say they use or gain from a strategy simply to please a teacher and teachers realize this, as the field notes below indicate:

> Teacher: Alright, which of the things that I did with you helped you the most to learn those words? Was it the sentences, was it the writing of the word over and over again, was it the picture, or was it the thumbing through the word?
>
> Pete: None of them. I knew all those words before.
>
> Teacher: So you've known them before? How do you think you learned them?
>
> Pete: By thumbing through the word.
>
> (OBS: Pete did not know the words before. He did do the thumbing through and he said it helped but I believe that this was said for my benefit. I don't feel he will use the procedure. Pete has a habit of writing the words over and over again and looking at the previous one written and saying the letters. He has such an ingrained habit of this I feel it will take a lot to change him. He seems to have developed his own strategy. I don't know whether it is working for him, but he does not seem to be making that much progress).
>
> (2/10/82)

Whether the student really does or does not believe in the strategy here is not the point, the teacher believes he does not. The fact that the student did profit from the strategy is also not the point. If he really feels he did not profit, he will not use it; if the teacher believes statements are not valid, he/she will not prompt use of the strategy. Close observation of specific student reading behavior would have enabled the

teacher to assess the actual value of the strategy for this student, and to point out signs of progress.

To help teachers become aware of these problems, diagnostic activities were added to each module. Diagnosis was promoted not only by providing a pretest, but by providing an activity enabling teachers to analyze relevant reading behaviors and an activity promoting teacher analysis of improvement in these reading behaviors.

Need For Question And Answer Section

When the strategies were presented to state field-test teachers in workshops, a number of relevant questions arose. In addition, questions about ways to introduce or adapt the strategy were directly raised or implied on the returned state questionnaires. The questions covered a variety of topics, indicating needs for clarifications, repetition or extension of information.

This information could not readily be accommodated in the existing module structure. Questions were too varied to be organized into one component. Therefore, a question and answer section was added to the module. Here, the diverse questions indicated by teachers were listed with appropriate responses.

Summary and Conclusion

The modules were developed and adapted to provide teachers with the information they would need to effectively teach the strategies. Field-testing and research on change had made it clear that if the modules were

to be effective, they had to enable the teachers to use the strategies and convince the teachers that they should use the strategies. Therefore, in developing and revising the modules every effort was made to provide for understanding and acceptance of the strategy. Four components were added to the module to promote this understanding and acceptance: extended explanation of the rationale for the strategy; simplified statements of rationale for ABRs; self-assessment teaching activities and a question and answer section dealing with most frequently asked teacher questions and misunderstandings.

To further promote teacher acceptance of the strategies, it was recommended that strategies be presented in a workshop format, and that the modules be provided as a reference. A workshop format was provided for each module. The workshop stressed the rationale for the strategies and suggested involving teachers in actively assessing and adapting them. Modules were finalized after state field-testing.

The modules in their final form included eleven sections labeled as: 1) Definition of strategy, 2) Development and rationale, 3) Explanation of value of the strategy, 4) Sample pretest, 5) Sample lesson plan, 6) Discussion of potential problems, 7) Over-the-shoulder approach, 8) Questions and answers, 9) Alternative teaching and practice ideas, 10) Self-correcting teacher-learning activities, and 11) Sample workshop for introducing the strategy.

The need for each of these sections was established by consultants, local and state piloting and related research on change.

CHAPTER IV

STATE FIELD TESTING OF PILOT MODULES

Sally Schumacher and Lois Lavery

This Chapter presents the results of the state field testing of two pilot modules, Segmenting and Variable Vowel /e/. The focus and conceptual models for the evaluation study are explained. Data collection procedures including instrumentation, state sampling procedures and sample size, and techniques of analysis are stated. The findings of the field testing are presented in charts followed by a discussion of the results and implications.

Introduction

Focus

The purpose of the state pilot testing of the Module: Segmenting and the Module: Variable Vowel /e/ was to (1) assess if teachers were able to use the pilot modules to enhance student reading, i.e. "teachability and usage"; (2) obtain information for revision of the pilot modules; and (3) obtain information for dissemination planning. The data for the state field testing was teacher questionnaires given to a sample of teachers representative of the Virginia adult basic education (ABE) teachers who taught adult basic readers (ABRs) reading at the 0.1 to 3.9 grade level. The audiences for state field testing were (1) the Reading Specialist and Project Co-Director who developed the modules based on an eight month ethnographic study of adult basic behaviors (See Report of 310 Project: Ethnographic

Research on Basic Reading Skills), and who revised the modules based on local and state field testing; (2) the Division of Vocational Education, Administrative Services, and Continuing Education of the Virginia Department of Education whose concerns focused on the dissemination of the revised modules; and (3) ultimately the teachers of ABRs. The second Project Co-Director conducted the evaluation of the state field testing.

Conceptual Models for Evaluation

D. Stufflebeam and W.J. Webster (1980) identified thir-teen types of studies most often used for evaluation. These types of studies were classified as "pseudo-evaluation," "quasi-evaluation," and "true evaluation," based on the degree to which each type of study was congruent with a definition of evaluation. "According to that definition, an educational evaluation study is one that is designed and conducted to assist some audience to judge and improve the worth of some education object" (p. 6). Each approach to evaluation has advantages and limitations. In a real-life situation, an evaluator may have to use several approaches to conduct a comprehensive evaluation.

"True evaluation," according to D. Stufflebeam and W.J. Webster (1980) and E. Guba and Y. Lincoln, Effective Evaluation (1981), focuses directly on values to determine the merit and worth of an educational product or practice. Values-oriented studies include accreditation/certification studies, policy studies, decision-oriented studies, consumer-oriented studies, client-centered studies, and connoisseur-based studies. The values may be of the larger society as represented by an accrediting agency,

certifying groups, political institutions, or educational consumers; or may be of a state educational program as represented by the decision-makers of the institution administering the particular program.

Two evaluation models served as the conceptual basis for the state field testing: decision-oriented evaluation and responsive evaluation. Both of these models were adjusted to meet the needs of the decision-makers and audiences and the particular stage of product development for this 310 project. However, it is important that the state field testing design be understood in the context of the evaluation models and approaches.

A third evaluation model, the objectives-based model, which D. Sufflebeam and W.J. Webster (1980) do not classify as "true evaluation," was inappropriate for this study for several reasons. The purpose of the state evaluation was to obtain information for module revision and, therefore, the focus of the study was on how teachers used the pilot modules, their perceptions of student behavior, and their reactions to the modules. Because the pilot modules were in a developmental stage and student objectives were in the process of clarification and specification, the evaluation could not directly assess student outcomes. The objectives-based model of evaluation assesses only those apriori objectives stated in behavioral student outcomes (Popham, 1975). Further, the objectives-based model assumes the instructional product was implemented as intended. Because of the purpose of the state field testing and the inability to meet the assumptions of the objectives-based model of evaluation, this approach was not chosen.

The decision-oriented evaluation models, especially the CIPP model (Stufflebeam, et. al., 1971) and the CSE model (Atkin, 1969) are broader in scope than the objectives-based approach to evaluation and imply a theory of

product development. The orientation of this evaluation is toward aiding educational decision-makers. Atkin defines evaluation as the "process of determining the kinds of decisions that have to be made; selecting, collecting and analyzing the information needed in making these decisions, and reporting this information to appropriate decision-makers" (Atkin, 1969, p. 2). The CIPP model, using a similar definition of evaluation, is an acronym for four types of evaluations: context, input, process and product. Context evaluation, needs assessment evaluation, input evaluation and program planning evaluation provide the justification for determining educational objectives and the selection of a strategy including procedures and materials. This was accomplished in the first year 310 Project Ethnographic Research on Basic Reading Skills. The project Co-Director, based on the first year report, decided four instructional modules were needed to aid ABE teachers in the teaching of reading to ABR students. Further, these modules had to be adaptable to different teaching styles, reading instructional materials, and student needs.

The state field testing focused on process evaluation (CIPP model) and implementation and progress evaluations (CSE model). Process and implementation evaluation identifies any defects in the design or procedures of a model, especially those components not being implemented as originally planned. Progress evaluation provides information about the relative success of the various components of the module or the extent to which enroute activities by students and teachers are achieved. The purpose of process, implementation, and progress evaluation is module modification.

A second evaluation model which served as a conceptual base for the state field testing was responsive evaluation (Stake, 1975). Responsive evaluation emphasizes gathering data useful to persons involved in product

development by focusing on their issues and concerns. R. Stake said "an educational evaluation is responsive if it orients more directly to program activities than program intents; responds to audience requirements for information; and if the different value-perspectives present are referred to in reporting the success and failure of programs" (1975, p. 14). Audiences for the state field testing of the pilot modules other than the Project Co-Director were the Virginia Department of Education and ultimately the users of the modules, ABE teachers in the state. Concerns expressed by these audiences were in the ease of implementing the modules and the congruence of the modules with existing reading materials, teaching conditions, and teaching styles, i.e. dissemination information.

The Pilot Modules and Orientation Workshops

The pilot Module: Segmenting was a fourteen page explanation with examples of the teaching strategy. The Introduction defined the strategy of segmenting as "saying the sound of each letter separately, so hat is /h/ /a/ /t/," (p. 4), and stated the value of the segmenting strategy as enabling a student to decode more effectively. The Precheck helped identify students who could profit from the strategy. The Teacher Strategy described the teacher's role as (1) explaining the value of the strategy, (2) modeling the strategy, and (3) having the student model the strategy. The Student Strategy was a one-liner prompt the student would state and use when reading independently. The Follow-Up activities suggested alternative procedures for using the strategy.

The Module: Variable Vowel /e/ was a four page explanation with examples of the teaching strategy. The module defined the strategy as one which "teaches the adult to (1) notice the vowel, (2) say /e/ if they did

not know the vowel, (3) thumb through the word, and (4) read" (p. 1). The value of the strategy of the variable vowel /e/ was that if adults made some sound for the vowel and reread, they would say the word correctly 90% of the time. The precheck helped identify students who would not profit from this strategy, i.e. those adults who knew and used all vowel sounds. The Teaching Strategy described the role of the teacher as modeling the strategy, explaining the value of the strategy, and having the student model the strategy. The Student Strategy was having students underline the vowel in a word, say /e/ for the unknown vowel, and thumb through the word. A worksheet was provided for both teacher and student to use. Alternative techniques and follow-up activities were not provided.

The field testing occured in February, March and April, 1982, following workshops for ABE teachers and supervisors. The hour and a half workshops were held on January 25th and 26th and February 3rd and 8th, 1982. Teachers and supervisors from the following adult basic education programs participated in the workshops: Virginia Beach, Portsmouth, Norfolk, Newport News, Hampton, Williamsburg, Poquoson, Sussex, Dinwiddie, Greensville, West Point and Westmoreland. The workshops were organized by Doris Walker, Adult Education Supervisor of the Virginia Department of Education, and led by Dr. Nancy Boraks, Project Co-Director. The workshops were more an orientation to the project, the two pilot modules, and field testing than an in-service training program on the teaching of reading to adults by using pilot modules.

Procedures

Procedures for the state field testing include instrumentation, state sampling, the sample size, and data collection and analysis. Each of these is explained below.

Instrumentation

R. Stake believes that "for an evaluation to be useful, the evaluator should know the interests and language of his audiences. During an evaluation study, a substantial amount of time may be spent learning about the information needs of the persons for whom the evaluation is being done. The evaluator should have a good sense of whom he is working for and their concerns." (1975, p. 13). The project Co-Director, who was responsible for the evaluation of the state field testing, took extensive notes at the weekly staff meetings from September, 1981 through May 1982, to identify the concerns and the language as the pilot modules were developed, and as the results of the local field testing were discussed. Several conferences were held with two Supervisors of Adult Education of the Virginia Department of Education regarding information needs of instructional development projects.

Content validity was established for each questionnaire by two methods. A list of possible variables which might effect teacher usage of the pilot modules, the instructional variations in ABE programs, and the information needs for revision of the modules and for dissemination was made. Questions were developed from this list. A panel of experts reviewed each draft of the questionnaires. The panel of experts included the two Project Co-Directors, two project research assistants, and two Supervisors of Adult Education from the Virginia Department of Education. The evaluation

questionnaire for the Module: Segmenting was revised seven times. The evaluation questionnaire for the Module: Variable Vowel /e/ was revised five times.

Each questionnaire followed a similar format even though certain questions relevant to the particular module differed. Section one sought information on module usage and demographic information about the ABE pilot teacher. Section two assessed teacher perceptions of student behavior and techniques used to help those students having difficulty. Section three requested teacher reactions to using the module, suggested changes in the module, and type of students which the module worked best with. Section four sought information needed for dissemination.

The evaluation questionnaire for the Module: Segmenting contained 33 questions which focused on module usage (8 items), student behaviors (7 items), teacher reactions (11 items), and dissemination (7 items). Nine of the 33 questions were open-response items and the remaining items were closed-response. The evaluation questionnaire for the Module: Variable Vowel /e/ contained 36 questions which focused on module usage (8 items), student behavior (11 items), teacher reactions (10 items), and dissemination (7 items). Seven of the 36 questions were open-response items and the remaining items were closed-response. Copies of both evaluation questionnaires are in the Appendix.

State Sampling Procedures

The pilot sites were selected to be representative of the Virginia adult basic reading program in the community type and the delivery system. Analysis of the history of adult basic reading student enrollment using 1979-80 state yearly reports, indicated that 61% of the adult basic reading

students (ABRs) attended satellite classes and 39% attended adult learning centers. Sixty-two percent of the ABRs enrolled in programs in city/town locations, 18 percent of the ABRs enrolled in programs in suburban locations, and 20 percent of the ABRs enrolled in programs in rural locations. An analysis of the history of adult basic education (ABE) teacher allocation indicated that 17% of the ABE teachers taught in adult learning centers and 83% of the ABE teachers taught in satellite classes. Forty-one percent of the ABE teachers taught in city/town locations, 20% of the ABE teachers taught in suburban locations, and 39% of the ABE teachers taught in rural locations. Thus, 17% of the ABE teachers taught 39% of the ABR students in adult learning centers, and 83% of the ABE teachers taught 61% of the ABR students in satellite classes. Using the history of student enrollment or teacher allocation alone as the basis for determining the state sampling procedure would not have provided a sample representative of the Virginia adult basic reading program.

A stratified sampling procedure was necessary to select pilot sites representative of the Virginia adult basic reading program. Based on the recommendations of Ms. Doris Walker and Mr. Lennox McLendon, Supervisors of Adult Education, Virginia Department of Education, pilot sites were selected, stratified by delivery stystem and community type. Chart I below describes the allocation of Virginia ABE teachers by these two variables. An ABE teacher was one who had at least one ABR student. The unit of analysis for the state field testing was the ABE teacher and not the ABR students.

CHART I

ABE TEACHER ALLOCATION IN VIRGINIA
BY COMMUNITY TYPE AND DELIVERY SYSTEM*

Delivery System	City/Town No.	%	Suburban No.	%	Rural No.	%	Total No.	%
Satellite Classes	113	41%	49	17%	119	42%	281	100%
Adult Learning Centers	27	47%	18	32%	12	21%	57	100%
Total Number	140	41%	67	20%	131	39%	338	100%

* 1979-80 State Reports: Percent is by lines, not columns.

Several factors were considered in determining sample size: (1) the unit of analysis (the user, rather than the students) (2) size of the sub-group within the stratefied sample; (3) the cost of producing duplicates of the pilot modules; (4) the feasibility of a state adult education supervisor and one Project Director delivering the pilot modules to different sites and providing a brief orientation for the pilot teachers; and (5) time necessary to analyze questionnaire data. The teacher sample size was 20 teachers, stratified by delivery system and community type. Chart II illustrates sampling procedure and sample size.

CHART II
SAMPLE SIZE AND PROCEDURE
FOR PILOT TEACHER SELECTION

Delivery System	Community Type: City/Town Number	Suburban Number	Rural Number	Total Number
Satellite Classes	4	2	4	10
Adult Learning Centers	5	3	2	10
Total Number	9	5	6	20

The southwestern area of Virginia, as divided by the Virginia Adult Education Service, was the location for the pilot sites. The need for continuity and consistency in communication during the field testing required the location of the sites to be under the direction of one state adult education supervisor. The southeastern area contained sites to meet the sample criteria and stratified sampling procedure to be representative of the Virginia adult basic education program. The pilot sites were selected and all ABE teachers and supervisors at these sites were invited to attend the workshops.

Data Collection, Analysis and Presentation

The two questionnaires were sent to the pilot teacher sample the first week of February, requesting that the completed forms be returned by February 26, 1982. The deadline was extended to allow for more field testing with students who did not have regular attendance patterns and for

those pilot sites who began the field testing two weeks later because of division calendars. A follow-up letter requesting both questionnaires was sent in March to the sample teachers. A follow-up telephone call was made to those pilot teachers who had not returned their evaluation questionnaires, and the date of return was extended to April 30th, 1982. Data collection ended April 30th, 1982.

A total of 25 questionnaires on the Module: Segmenting were returned. Of these, five respondents were unable to complete the questionnaire because of lack of students in the ABR program or time for field testing. Chart III below indicates the number returned by sample procedure.

CHART III

NUMBER OF RESPONDENTS BY SAMPLING PROCEDURE FOR MODULE: SEGMENTING

	Community Type			
Delivery System	City/Town Number	Suburban Number	Rural Number	Total Number
Satellite Classes	6	1	4	11
Adult Learning Centers	4	4	1	9
Total Number	10	5	5	20

A comparison of Chart II and Chart III indicates that the number of respondents for satellite classes in city/town increased by one and decreased by one for adult learning centers in a rural community. The sample was considered representative.

A total of 26 questionnaires on the Module: Variable Vowel /e/ were returned. Of these, nine respondents were unable to complete the questionnaire because of lack of students in the ABR program or time for field testing. Chart IV below indicates the number returned by sampling procedure.

CHART IV

NUMBER OF RESPONDENTS BY SAMPLING PROCEDURE
FOR MODULE: VARIABLE VOWEL /e/

	Community Type			
Delivery System	City/Town Number	Suburban Number	Rural Number	Total Number
Satellite Classes	6	0	2	8
Adult Learning Centers	4	4	1	9
Total Number	10	4	3	17

A comparison of Chart II and Chart IV indicates that the number of respondents decreased by two for the suburban satellite classes and by one for rural adult learning centers. Although the respondents did not exactly match the sampling procedure in some other categories, the consistency of

the responses suggests that these variations did not effect the interpretation of the data. The analysis is limited in that only 17 of the necessary 20 sample questionnaires were usable and no data was returned for one of the six sample categories. However, this sample category represented only 17% of the ABE teachers.

The data was analyzed by descriptive statistics, using frequencies, sums, and percentages. All percentages were rounded to the tenth digit. Categories were developed for the open response items. Qualitative responses were categorized independently by both researchers and then synthesized. Because of the small sample size, 20 out of 338 ABE teachers, sub-group analysis was not done. The findings are presented in charts for each module, followed by a summary of the results.

Findings

The results of the state field testing of both modules are presented separately. Although both modules used the same general approach to adult beginning reading instruction, each module focused on one strategy which required different teacher and student behaviors. The results of the piloting Module: Segmenting will be presented first.

Pilot Module: Segmenting

The findings from the state field testing of the Module: Segmenting are presented as follows: demographic data of ABR pilot teachers (Chart V), teacher perceptions of student reactions (Chart VI), teacher reactions to using the pilot Module (Chart VII), and dissemination information (Chart VIII).

CHART V

MODULE: SEGMENTING

DEMOGRAPHIC DATA: TEACHER EXPERIENCE, MODULE USAGE, AND READING APPROACH

N=20

Teaching experience with ABRs:

4	this year only	5	4-6 years
6	1-3 years	5	over 7 years

Training in the teaching of reading:

17	yes	3	no

Type of training in the teaching of reading

14 college course

11 in-service training for 2 2 hrs, 4 hrs, 8 8 hours or more

Minutes per student to use Module:

6	15 minutes	3	31-45 minutes
8	16-30 minutes	0	over 46 minutes

General reading level of students in field testing:

7	Grade 0-.9	9	Grade 2-2.9
7	Grade 1-1.9	8	Grade 3-3.9

Number of field tested students per teacher:

1-15 range

8 average

Number of times used Module with the same student:

3-16 range

5 average

Instructional situations for Module usage:

16 individual instruction

11 class instruction with

4-15 range of class size

9 average class size

General reading approach by ABE teacher:

16	decoding	12	language-experience
15	word families	1	other: patterns
16	sight words		

Demographic Data. Demographic characteristics of the teacher sample and Module usage are presented in Chart V (p. 88), followed by a summary.

The Module: Segmenting was field tested primarily by an ABE teacher sample who had previous experience in teaching ABRs and three-quarters of whom had training in the teaching of reading. The majority of teachers had one college course and/or in-service training in the teaching of reading; however, three teachers had no previous training in reading instruction.

The general reading level of students was distributed evenly among Grade 0-.9, Grade 1-1.9, Grade 2-2.9, and Grade 3-3.9. About half the teachers sample used the Module from 16-30 minutes per student, and the remaining teachers used the Module 15 minutes per student (6 teachers) or 31-45 minutes per student (3 teachers). Teachers field tested the Module on one to 16 students per teacher with eight different students as the averaged number field tested by each. Average use of the Module per same students was five times in both class and individual instruction. The average class size for the sample teachers was nine students.

The general reading approach of the pilot teachers was eclectic. Of the 20 teachers, 16 used decoding; 15 used word families; 16 used sight words; and 12 used a language-experience approach.

Perceptions of Student Behaviors. Teacher perceptions of student behaviors in learning activities, identification of student difficulties, and how teachers responded to overcoming these difficulties are presented in Chart VI (p. 90) and followed by a summary.

Forty percent of the sample teachers stated that students seldom passed the pre-test. Seventy-five percent of the teachers reported that students duplicated the teacher example of the segmenting strategy. While 20% of the

CHART VI

MODULE: SEGMENTING

PERCEPTIONS OF STUDENT BEHAVIORS

N=20

	A	U	S	N	NR*
1. Students passed the pre-test.	10%	30%	40%	0%	20%
2. Students duplicated teacher example of segmenting strategy.	5%	75%	10%	0%	10%
3. Students could thumb the word.	20%	60%	15%	0%	5%
4. Students applied segmenting as a strategy to learn new words.	0%	65%	25%	0%	10%

5. Students had the most difficulty in (check as many as apply):
   - 75% blending the segmented letters
   - 65% segmenting a vowel sound
   - 55% shaking their head for a sound not known
   - 35% segmenting each letter
   - 25% segmenting final sound
   - 15% recognizing they do not know a word
   - 15% segmenting initial sound
   - 10% thumbing through the word
   - 5% other. Explain: Some students wanted to spell, not segment.

6. I helped the students having difficulty by the following methods:
   16-use of previous teaching techniques to supplement the module:
   - 3 - blending
   - 2 - teacher modeling
   - 2 - small words in a large word
   - 2 - putting vowel in a word pattern
   - 2 - writing word
   - 1 of each of the following: decoding, word families, sight words, rhyming words, individual instruction

   14 - review and repetition
   - 8 - reviewed total Module
   - 6 - reviewed sounds: consonant and vowel

Cont'd.

CHART VI (cont'd)

7. In addition to the procedures used in the Module, what other technique(s) did you find necessary to use with your students?
   - 5 - "reviewing consonants and vowels was necessary"
   - 4 - sight words
   - 3 - decoding
   - 2 - word families
   - 2 - language experience
   - 2 - recognizing syllables
   - 1 of each of the following: auditory discrimination, teaching blends, nonsense syllables, word bank

* A = always; U = usually; S = seldom; N = never; NR = no response

teacher sample stated that students always thumb through the word, 60% of the teachers stated students usually thumb through the word, and 15% of the teachers stated students seldom do so. Sixty-five percent of the teachers said students usually applied segmenting as a strategy to learn new words, while 25% reported students seldom used segmenting as a strategy.

The sample teachers were asked to identify those learning activities which gave the students the most difficulty. In rank order, the difficulties identified were: blending the segmented letters (75% of the teachers), segmenting a vowel sound (65% of the teachers), shaking their head for a sound not known (55% of the teachers), segmenting each letter (35% of the teachers), segmenting the final sound (25% of the teachers), recognizing they do not know a word (15% of the teachers), segmenting initial sound (15% of the teachers), thumbing through the word (10% of the teachers), and a desire to spell rather than segment the word (5% of the teachers).

Sixteen of the 20 sample teachers helped students having difficulty by using previous teaching techniques to supplement the Module. These previous techniques included blending, teacher modeling, identifying small words within a large word, putting a vowel in a word pattern, and writing the word. Fourteen of the 20 sample teachers felt review and repetition was essential, especially sounds.

A similar response was given by 14 of the 20 sample teachers when asked what other techniques did you find necessary to use with your students. Reviewing consonants and vowels was mentioned most frequently (5 teachers), followed by previously used approaches to teaching reading such as sight words, decoding, word families, language experience, and the technique of recognizing syllables.

Teacher Reactions. Teacher reactions to using the Module, identification of instructional problems and successes, and the identification of the appropriate students for Module usage are presented in Chart VII (p. 94), followed by a summary.

Fifty percent of the sample teachers reported that the directions were usually clear, and 40% of the teachers stated that the directions were always clear. Fifty percent of the sample teachers felt a knowledge of decoding was always necessary and 30% of the teachers felt it was usually necessary. Ninety-five percent of the teachers stated that oral practice always or usually enhanced student learning, and 85% of the teachers thought their example of the reading strategy always or usually enhanced student learning. Fifty-five percent of the teachers felt it was seldom difficult to use the Module in their situation although 15% usually found it difficult, and 10% never found it difficult to use the Module in their situation.

The most difficult aspect of teaching the Module was adjusting to the innovative approach required by the Module of both teachers and students. Three-quarters of the teacher sample noted student difficulties, commenting "Getting my students involved with using sounds. Some of my students felt too advanced to do this as well as felt frustrated in sounding out letters"; "Getting students to understand and transfer what was being taught"; "Blending"; and "Getting students to utilize techniques contrary to their basic approach such as head shaking and omitting unknown sounds". One quarter of the teacher sample also stated that the Module required teaching techniques which differed from their usual procedures. Comments such as, "I feel that I could do a better job in using the strategy if given more time

CHART VII

MODULE: SEGMENTING

TEACHER REACTIONS

N=20

	A	U	S	N	NR*
1. The directions in the Module were clear.	40%	50%	0%	0%	10%
2. Knowledge of decoding is necessary to teach this Module.	50%	30%	0%	5%	15%
3. I used the Alternative/ Practices Ideas.	15%	30%	25%	5%	25%
4. Oral practice enhanced student learning.	70%	25%	0%	0%	5%
5. Teacher's example of the reading strategy enhanced student learning.	35%	50%	0%	0%	15%
6. It was difficult to use the Module in my situation.	5%	15%	55%	10%	15%

7. The most diffifult aspect of teaching the Module was:
   12 - Innovation of strategies for students
      4 - "Getting my students involved with using sounds. Some of my students felt too advanced to do this as well as felt frustrated in sounding out letters."
      4 - "Getting students to understand and transfer what was being taught."
      2 - Blending
      2 - "Getting students to utilize techniques contrary to their basic approach-such as head shaking and omitting unknown sounds."
   5 - Innovation of strategies for teacher
      - "I feel that I could do a better job in using the strategy if given more time to absorb it myself."
      - "I didn't feel comfortable drawing the figures. It took too long to think of drawings for some words."
      - "Requires much individualized instruction, constant supervision and oral practice."
   2 - None
   1 - Management "due to variable reading backgrounds and deficiencies of students."

Cont'd.

8. I plan to use the following techniques in the Module in future instruction:
   16 - indicated they will use the entire Module or specific components.
   9 - strategies teachers mentioned they would use:
      4 - Thumbing
         - "Thumbing through the word is good." "Allowed the students to see only a small part of the word. Helpful to better readers tackling larger words."
         - "Isolation of the letters and one-liner 'thumb through the word.'"
         - "Emphasize teacher modeling of thumb through the word."
      3 - Sounds
         - "Listening to sounds."
         - "I plan to continue teaching consonant sounds, vowels, and segmenting procedures."
      2 - Other: decoding, context clues
   2 - Will use strategy if a student has a problem
   1 - "I like all techniques and will use them. Usually if a teacher is at ease with a technique (which comes with continued usage), a higher degree of success prevails."

9. The following changes in the Module would be helpful:
   2 - Recommended no changes or "It is too soon to decide on this issue."
   2 - Recommended changes:
      - "Use of nonsense syllables-difficult words-which I know will not be sight words."
      - "Pause instead of head nod. It's not natural."
   2 - "The strategy was most helpful in my class. The students enjoyed learning a new technique."

10. This Module worked best with what type of student (ESL, slow learners, grade levels)?
   12 - slow learners
   4 - Grades 2-4
   3 - Grades 3-5
   3 - Grades 0-1
   2 - Other special students: ESL, L.D.

Cont'd.

CHART VII (cont'd)

11. This Module did not work well with what type of student (ESL, slow learners, grade levels)?
    - 5 - "Students who have already established their own method," "Students who have no set pattern of spelling," or who are "new readers"
    - 3 - slow learners
    - 3 - students who don't know 15 sounds and have no left-right directionality
    - 2 - ESL
    - 2 - special students: speech impaired, mentally retarded
    - 2 - Grade 3.9 or above

* A = always, U = usually; S = seldom; N = never; NR = no response

to absorb it myself", "I didn't feel comfortable drawing the figures. It took too long to think of drawings for some words", and "Requires much individualized instruction, constant supervision and oral practice". Two of the 20 sample teachers reported no difficulty in using the Module.

Three-quarters of the teacher sample stated that they would use the entire Module or specific techniques within the Module. Specific techniques cited, in rank order, were (1) thumbing-"Thumbing through the word is good. Allows the student to see only a small part of the word. Helpful to better readers tackling larger words"; (2) sounds- "I plan to continue teaching consonant sounds, vowels, and segmenting procedure"; and (3) decoding and context clues. One teacher stated, "I like all techniques and will use them. Usually if a teacher is at ease with a technique (which comes with continued usage), a higher degree of success prevails."

Only two of the 20 sample teachers made suggestions for Module modification while four teachers commented, "no change," "It is too soon to decide on this issue", and "The strategy was most helpful in my class. The students enjoyed learning a new technique". Suggestions were to use nonsense syllables which will not be sight words, and to use a "pause instead of a head nod".

The teacher sample was asked which type of student did the Module work best with and which type of student did not respond well to the Module. Teachers consistently reported that the Module worked well with "slow learners," specifically Grades 0-5 and special students such as ESL and L.D. Teachers were in less agreement on stating the type of student that did not respond well to the Module. Although two teachers noted ESL, special students, and Grade 3.9 or above, respectively, there was more agreement on the skill level of students who did not respond well to the Module.

Teachers stated, "students who have already established their own method", "students who have no set pattern of spelling", students who are "new readers", and "students who do not know 15 sounds and have no left-right directionality", did not respond well to the Module.

Dissemination Information. Teacher statements regarding the value of this approach to teaching reading, the adaptability of the Module, and suggestions for implementation are presented in Chart VIII (p. 99), followed by a summary.

Ninety percent of the sample teachers stated that the Module always or usually complimented and facilitated the teaching of reading with the existing reading program. Eighty percent of the teachers thought the Module facilitated reading instruction by focusing on one essential need. Ninety percent of the sample believed that teaching reading strategies to enable the adult to continue to learn new words was important. Teachers stated that they could incorporate this Module in their teaching style (85 percent), and that the Module could be adjusted to different kinds of students (80 percent). Ninety percent of the sample teachers would recommend using the revised Module to other ABR teachers.

When asked suggestions for helping an ABR teacher use this Module effectively, the following suggestions were made in rank order: conducting a workshop (80 percent of the teachers), providing more written information within the Module (25 percent of the teachers), demonstrating the Module with an ABR class (5 percent of the teachers), and individual practice by the ABR teacher (5 percent of the teachers). Five percent of the sample teachers made no suggestions.

CHART VIII

MODULE: SEGMENTING

DISSEMINATION INFORMATION

N=20

	A	U	S	N	NR*
1. This Module compliments or facilitates the teaching of reading with the existing reading program.	35%	55%	5%	0%	5%
2. This Module facilitates the teaching of reading by focusing on one essential need.	25%	55%	5%	0%	5%
3. Teaching reading strategies to enable the adult to continue to learn new words is important.	80%	10%	0%	0%	10%
4. I can incorporate this Module in my teaching style.	30%	55%	10%	0%	5%
5. The Module can be adjusted to different kinds of students.	20%	60%	10%	0%	10%
6. I would recommend using the revised Module to other Adult Basic Reading teachers.	40%	50%	5%	0%	5%

7. Suggestions for helping an Adult Basic Reading teacher use this Module effectively include: (check as many as apply)

5% none
25% more written information
80% a workshop
10% other. Explain: demonstration with an ABR class; much practice by ABR teachers.

* A = always; U = usually; S = seldom; N = never; NR = no response

Summary. In summary, eighty percent of the sample teachers were experienced ABR teachers, and 85 percent had previous training in the teaching of reading through in-service training or a college course. The Module was field tested on students whose general reading level was distributed evenly among Grades 0-3.9. A majority of the teachers used the Modules from 16 to 30 minutes per student, with eight different students and repeated the Module five times with the same student. Most teachers used the Module in both class and individual instruction. The sample teachers were eclectic in their general approach to the teaching of reading, using decoding, word families, sight words, and language-experience approaches.

The sample teachers reported that most students either seldom (40% of the teachers) or usually (30% of the teachers) passed the pre-test. Seventy-five percent of the teachers said students could duplicate the teacher example of the segmenting strategy. Students could usally thumb through the word (60% of the teachers) and usually applied the strategy to new words (65% of the teachers). Students had the most difficulty with blending the segmented letters, segmenting a vowel, shaking their head for an unknown sound, and segmenting parts of a word other than the initial sound. Teachers helped students having difficulty by using previous teaching techniques to supplement the strategy: blending, teacher modeling, placing small words and vowels in a sound pattern, and writing the word. Three-fourths of the teachers stated review of the entire Module, repetition of parts of the Module, and using their own previous approaches to teaching as necessary in teaching the Module.

Ninety percent of the sample teachers stated the Module directions were clear; 80% stated that a knowledge of decoding was necessary; 95% stated oral practice and 85% stated teacher modeling enhanced student learning; 65% stated that it was not difficult to use the Module in their situation. The most difficult aspect of teaching the Module was adjusting to the innovative approach required by the strategy for both teacher and students. Innovative components of the Module which were mentioned were, "using sounds," "blending," "techniques contrary to their basic approach--such as head shaking and omitting unknown sounds," and "much individualized instruction, constant supervision, and oral practice." However, three-quarters of the sample teachers would use the entire Module or specific techniques within the Module such as thumbing, sounds, and decoding. Four teachers suggested no changes were necesary now and two teachers made specific suggestions. The sample teachers stated the Module worked best with "slow learners," specifically Grades 0-5. Students who did not respond well to the Module were those who (1) were "new readers," (2) had their own method of learning new words, or (3) did not know 15 sounds.

The sample teachers reported the following on dissemination: 90% stated the Module complimented or facilitated the teaching of the existing reading program; 80% believed that teaching reading strategies enabled the adult to continue to learn new words; 85% stated that the Module could be incorporated into their own teaching style; 80% stated that the Module could be adjusted to different kinds of students; and 90% of the sample teachers would recommend the revised Module to other ABR teachers. To aid in implementation of the Module, 85% of the sample teachers recommended a workshop, and 25% suggested providing more written information within the Module.

Pilot Module: Variable Vowel /e/

The findings from the state field testing of the Module: Variable Vowel /e/ are presented as follows: demographic data of ABR pilot teachers (Chart IX), teacher perceptions of student reactions (Chart X), teacher reactions to using the pilot module (Chart XI), and dissemination information (Chart XII).

Demographic Data. Demographic characteristics of the teacher sample and Module usage are presented in Chart IX, (p. 103) followed by a summary.

The Module: Variable Vowel /e/ was field tested primarily by sample ABE teachers who had previous experience in teaching ABRs, most of whom had training in the teaching of reading. Three-quarters of the sample teachers had both a college course and additional in-service training in the teaching of reading, however, two teachers had no previous training in reading instruction.

The general reading level of students was distributed almost evenly among Grade 0-.9, Grade 1-1.9, Grade 2-2.9, and Grade 3-3.9. Over half of the sample teachers used the Module for 15 minutes per student (10 teachers) and the remaining teachers used the Module 16-30 minutes per student (4 teachers) or 31-45 minutes per student (3 teachers). Teachers field tested the Module on one to thirteen students per teacher with six different students as the average number field tested by each teacher. Average use of the Module per same student was five times. Most teachers used the Module in both class and individual instruction. The average class size of the sample teachers was nine students.

CHART IX

MODULE: VARIABLE VOWEL /e/

DEMOGRAPHIC DATA: TEACHER EXPERIENCE MODULE USAGE, AND READING APPROACH

N=17

Teaching experience with ABRs:

2	this year only	6	4-6 years
4	1-3 years	5	over 7 years

Training in the teaching of reading:

15	yes	2	no

Type of training in the teaching of reading:

12 college course

12 in-service training for 0 2 hrs, 2 4 hrs, 10 8 hrs or more

Minutes per student to use Module:

10	15 minutes	3	31-45 minutes
4	16-30 minutes	0	over 46 minutes

General reading level of students in field testing:

6	Grade 0-.9	8	Grade 2-2.9	0	Above
5	Grade 2-2.9	7	Grade 3-3.9		Grade 3.9

Number of field-tested students per teacher:

1-13 range

6 average

Number of times used Module with same student:

3-16 range

5 average

Instructional situations for Module usage:

15 individual instruction

11 class instruction with

5-15 range of class size

9 average class size

General reading approach by ABE teacher:

14	decoding	10	language-experience
13	word families	3	other: patterns, segmenting
14	sight words		

The general reading approach of the pilot teachers was eclectic. Of the 17 teachers, 14 used decoding; 13 used word families; 14 used sight words; and 10 used language-experience.

Perception of Student Behaviors. Teacher perceptions of student behavior in Module activities, identification of student difficulties, and how teachers responded to overcome these difficulties are presented in Chart X (p. 106) followed by a summary.

Sixty-five percent of the teacher sample stated that students usually could say /e/ but the student seldom could substitute /e/ for a vowel. Fifty-three percent of the teachers said students usually could thumb through a word without prompting while 41% of the sample said students seldom could do this. Forty-seven percent of the teacher sample said students could blend words using /e/, while 24% of the sample said students usually could perform this. Fifty-nine percent of the teacher sample noted that students usually could say the correct word after the strategy. A similar reponse pattern was given for the statement that students could say the correct word when the teacher says /e/ for the vowel. Seventy-one percent of the teacher sample said students seldom used the strategy /e/ when reading without prompting. There seems to be no distinguishable pattern in the response to "only students who hear five vowel sounds are able to learn this strategy": 35% of the teacher sample said usually, 24% said seldom, 18% gave no response, and 12% said always and never, respectively.

The sample teachers were asked to identify those learning activities with which students had the most difficulty. In rank order, the difficulties identified were: substituting /e/ for a vowel (71% of the teachers),

CHART X

MODULE: VARIABLE VOWEL /e/

STUDENT BEHAVIORS

N=17

	A	U	S	N	NR*
1. Students can say /e/.	12%	65%	12%	0%	12%
2. Student substitute /e/ for a vowel.	0%	12%	65%	6%	18%
3. Students thumb through a word without prompting.	0%	53%	41%	6%	0%
4. Students blend words using /e/.	0%	24%	47%	12%	18%
5. Students say the correct word after the strategy.	6%	59%	24%	0%	12%
6. Students say the correct word when the teacher says /e/ for the vowel.	6%	53%	24%	6%	6%
7. Students use the strategy /e/ when reading without prompting.	0%	12%	71%	12%	6%
8. Only students who hear five vowel sounds are able to learn this strategy.	12%	35%	24%	12%	18%

9. Students have the most difficulty in (check as many as apply):
   - 71% substituting /e/ for a vowel
   - 65% blending the word
   - 47% saying /e/
   - 41% saying the correct word when the teacher uses /e/ for a vowel
   - 35% stating the strategy
   - 24% thumbing through the word
   - 24% understanding how the strategy helps in reading
   - 6% repeats vowels after teacher provides example
   - 6% underlining the vowel in a word
   - 6% other

Cont'd.

10. I helped the students having difficulty by the following methods:
    - 5 - demonstration and teaching modeling
      - "demonstration, reciting"
      - "repeated the vowel sound of /e/, gave examples of words with that sound, drew figures of the words, had them watch my mouth"
    - 5 - repeating variable vowel /e/ strategy
      - "repeating the /e/ many times, using several different examples"
      - "repetition for emphasis"
      - "drilling the procedure"
      - "reinforcement, continued reivew"
    - 4 - blending
      - "by thumbing through it, by saying 'say it fast' for blending"
      - "recognizing the different sounds, then blending the sounds together"
    - 8 - other methods: vowel patterns rather than the isolated vowel, review vowel sounds, thumbing, segmenting, Laubach picture cards, and "any and all methods, one following another until success was achieved."

11. In addition to the procedures used in the Module, what other technique(s) did you find necessary to use with your students?
    - 2 - segmenting
    - 2 - awareness of vowel sounds
    - 2 - decoding
    - 2 - sight words
    - 2 - language experience
    - 1 - counting vowels to determine syllables
    - 1 - students worked in pairs to practice strategy
    - 1 - write word phonetically
    - 1 - pictures
    - 1 - nonsense syllables
    - 1 - cvc and cvce patterns
    - 1 - none
    - 1 - encouragement
    - 1 - use of /a/ instead of /e/

* A = always; U = usually; S = seldom; N = never; NR = no response

blending the word (65% of the teachers), saying /e/ (47% of the teachers), saying the correct word when the teacher uses /e/ for a vowel (41% of the teachers), stating the strategy (35% of the teachers), thumbing through the word and understanding how the strategy helps in reading (24% of the teachers), and repeating vowels after the teacher provides an example and underlining the vowel in a word (6% of the teachers).

All of the sample teachers helped students having difficulty by further demonstration or teacher modeling (5 teachers), repeating the strategy (5 teachers), blending (4 teachers), or by other methods (8 teachers). Over half of the sample demonstrated the strategy with teacher modeling, and then reinforced the strategy through repetition (drilling) and review. Teachers reported that repeating the /e/ sound many times with several examples of words with the /e/ was necessary. It was also necessary to have the student repeat the /e/ sound many times and use it in examples. Blending was used by one-fourth of the teachers to have students "recognize the different sounds and then blend the sounds together". Other methods used by the sample teachers were: review of vowel patterns rather than an isolated sound, review of vowel sounds, thumbing, segmenting picture cards, and "any and all methods one following another, until success was achieved".

Twelve of the 17 sample teachers used a variety of other techniques with their students. Two teachers respectively used segmenting, awareness of vowel sounds, decoding, sight words, and language experience approaches. Awareness and review of vowel sounds seemed to be important. One teacher reported "students say all the sounds correctly when thumbing but change the vowel sound when blending. I encourage, repeat, and write the word phonetically." Other techniques used were counting vowels to determine syllables,

pictures, nonsense syllables, cvc and cvce patterns, and use of /a/ instead of /e/. One procedure mentioned was having students work in pairs to practice the strategy.

Teacher Reactions. Teacher reactions to using the Module, identification of instructional problems and successes, and the identification of the appropriate students for Module usage are presented in Chart XI (p. 109) followed by a summary.

Fifty-three percent of the teacher sample reported that the Module directions were always clear, and 41% stated that the directions were usually clear. Seventy-six percent of the teacher sample stated a knowledge of decoding was necessary to teach this Module. Sixty-five percent of the teacher sample said the teacher's example of the strategy usually enhanced student learning, while 24% of the sample said the teacher's examples always enhanced student learning. A similar response pattern was reported for the teacher's ability to think of sentences for oral practice. Twelve percent of the teacher sample seldom could think of sentences for oral practice and seldom thought their modeling of the strategy enhanced student learning. There was no distinguishable pattern in teacher's perceptions of difficulty of usage of the Module in their instructional situation. Twenty-four percent of the teacher sample said it was never difficult to use the Module; 24% said it was always difficult, 18% stated it was usually difficult, 21% said it was seldom difficult, and 4% did not respond.

The most difficult aspects of teaching the Module were student learning dissonance, student resistence, student difficulty, and the lack of teacher understanding or conceptual clarity (Schumacher, 1973) of the Module. Almost

CHART XI

MODULE: VARIABLE VOWEL /e/

TEACHER REACTIONS

N=17

	A	U	S	N	NR*
1. The directions in the Module were clear.	53%	41%	0%	0%	6%
2. Knowledge of decoding is necessary to teach this Module.	41%	35%	6%	12%	6%
3. I thought of sentences for oral practice.	29%	59%	13%	0%	0%
4. Teacher's example of the Module enhanced student learning.	24%	65%	12%	0%	0%
5. It was difficult to use the Module in my situation.	24%	18%	21%	24%	4%

6. The most difficult aspect of teaching the Module was:
   - 5 - Student learning dissonance
     - 1 - "telling students to ignore the vowel sounds I had been drilling and say /e/"
     - 2 - "students didn't know how to distort words; without prompting students didn't want to thumb through words"
     - 1 - "students did not want to substitute /e/; they tended to jump ahead and use their context clues"
     - 1 - "having my students use the sound approach. They are much more prone to spell words through association and sight techniques"
   - 5 - student resistence
     - 2 - "students resisted" "substituting the /e/ became difficult for all"
     - 2 - "getting the students to respond by giving sentences orally"
     - 1 - "getting the students to use the method on a word the second time if she wasn't successful the first time"

Cont'd.

4 - student difficulty: using the sound approach
- "my level 0-1 students do not remember enough consonant sounds"
- "some students never heard of vowels and found them difficult to learn"
- "blending of vowel sound with the consonant sound"
- "getting the students to say /e/"

3 - teacher understanding or conceptual clarity
- "I feel I could do a better job in using the strategy if given more time to absorb it myself"
- "there wasn't enough time to absorb procedures"
- "I suffered from having been unable to attend the workshop"

7. I plan to use the following techniques in the Module in future instruction:

8 - other techniques in conjunction with the strategy or review techniques
- 2 - decoding
- 2 - "thumbing through the word"
- 1 - "segmenting"
- 1 - "much review of phonics"
- 1 - "modeling"
- 1 - "teach long vowel sound, i.e., ea, ay, etc.

3 - "variable vowel /e/" strategy

1 - undecided: "I plan to try to get a better understanding of the strategy in order to use it more effectively with my students"

7 - future use of the module
- 5 - will use module
  - "Yes, I plan to continue to use the strategy in the future."
  - "Yes, it blends nicely with decoding and helps to insure success."
- 2 - inappropriate for pilot site instruction
  - "Sorry, no! Unless it is at the beginning of class (September) with all new students. Then there would be no conflict."

Cont'd.

CHART XI (cont'd)

8. The following changes in the Module would be helpful:
   4 - suggested changes:
      - "I will find it best not to isolate the vowel but to recognize it as part of a word pattern."
      - "Some help with silent e."
      - "I think a knowledge of more vowel sounds would be helpful."
      - "Vowel and consonant letter sounds should be reviewed. Students work individually."
   3 - no changes at this time

9. This Module worked best with what type of student (ESL, slow learners, grade levels)?
   9 - slow learners
   4 - Grades 3-3.9 and 4
   2 - ESL
   1 - first grade

10. This module did not work well with what type of student (ESL, slow learners, grade levels)?
   3 - slow learners
   3 - ESL
   3 - Grades 0-3.9
   2 - advanced ABR, above 3.9 Grade
   1 - "those who do not know letters and sounds and those who are extremely closed minded."

* A = always, U = usually; S = seldom; N = never; NR = no response

one third of the teacher sample reported indications of student learning dissonance. Learning dissonance occurred when the Module required students to do exercises which conflicted with what the teacher had been emphasizing, i.e. "telling the students to ignore the vowel sounds I had been drilling and say /e/" or in conflict with students' own methods of decoding words, i.e. "students didn't know how to distort words," "they tend to jump ahead and use their context clues," "they are much more prone to spell words through association and sight techniques." Learning dissonance occurred when use of the variable vowel /e/ conflicted with other skills such as use of context, word association, and sight techniques. Almost one third of the teacher sample reported student resistence to substituting the /e/ for the vowel, to giving sentences orally, and to continue use of the strategy if unsuccessful on the first attempt. One fourth of the teacher sample reported student difficulty in using the sound approach, i.e. students did not have the pre-requisite skills in order to use the variable vowel /e/ strategy. Difficulties reported were lack of knowledge of consonant sounds, lack of knowledge of vowels, blending the vowel sounds with the consonant sound, and skill in saying the sound /e/. Three of the 17 sample teachers reported that they either were unable to attend the workshop or had insufficient time and practice in "absorbing" the strategy. This lack of understanding or conceptual clarity regarding the variable vowel /e/ strategy is reflected elsewhere in teacher responses. Teacher understanding or conceptual clarity of the strategy enables a teacher to make instructional decisions which help students overcome resistence and difficulties. (Schumacher, 1973).

Fourteen of the sample teachers responded to the statement, "I plan to use the following techniques in the Module in future instruction: _____." The most frequent response was to list other techniques the teacher would use in conjunction with the variable vowel /e/ strategy or to review strategies of the module (eight teachers). Other techniques or review strategies listed were: decoding, thumbing through the word, segmenting, review of phonics, modeling, and teaching the long vowel sound. Three teachers would use the variable vowel /e/ strategy. One teacher planned to "get a better understanding of the Module." Seven teachers responded to the question by stating their plans for future use of the Module. Five of the fourteen respondents would use the Module, especially with decoding. Two of the teachers reported that the Module was inappropriate for pilot site instruction "unless it is at the beginning of the class (September) with all new students. Then there would be no conflict."

Seven of the 17 teacher sample responded to the statement, "the following changes in the Module would be helpful." Three suggested no changes at this time. Four teachers made four different suggestions: teach the correct vowel sound as part of a word pattern, teach silent e, provide a knowledge of more vowel sounds, and provide a review of vowel and consonant letter sounds.

The teacher sample was asked which type of students did the Module work best with and which type of student did the Module not work well with? One half of the teacher sample stated that the Module worked well with slow learners. There was less agreement on which grade level the Module worked best. Two teachers stated ESL students benefited from the Module. There was little agreement on the type of student who did not respond well to the Module. Teachers mentioned students who did not respond to the Module were

slow learners, ESL, Grades 0-3.9, advanced ABR, above Grade 3.9. One teacher said, "those who do not know letters and sounds and those who are extremely closed minded" did not respond well to the Module.

Dissemination Information. Teacher statements regarding the value of this approach to teaching reading, the adoptability of the Module, and suggestions for implementation are presented in Chart XII (p. 115) followed by a summary.

Fifty-seven percent of the sample teachers stated this Module always or usually complimented or facilitated the teaching of reading with the existing program; 27% of the sample said the Module seldom or never complimented the reading instruction; and 18% of the sample did not respond. Fifty-six percent of the sample teachers said the Module usually facilitated the teaching of reading by focusing on one essential need; 19% of the sample said the Module seldom facilitated instruction by focusing on one essential need; and 18% of the sample did not respond. However, 69% of the teacher sample stated that teaching reading strategies to enable the adult to continue to learn new words was important, and 24% of the sample did not respond. Although 62% of the teacher sample stated that they could always or usually incorporate this Module in their style of teaching, 19% of the teachers stated that they seldom could do so, and 12% did not respond. Fifty-six percent of the teacher sample stated they could usually adjust the Module to different students; 19% said they could seldom adjust the Module; and 12% did not respond. Seventy-three percent of the teacher sample would always or usually recommend the revised Module to other ABR teachers; 19% would seldom recommend the Module; and 12% did not respond.

CHART XII

MODULE: VARIABLE VOWEL /e/

DISSEMINATION INFORMATION

N=17

	A	U	S	N	NR*
1. This Module compliments or facilitates the teaching of reading with the existing reading programs.	19%	38%	13%	13%	18%
2. This Module facilitates the teaching of reading by focusing on one essential need.	6%	56%	19%	0%	18%
3. Teaching reading strategies to enable the adult to continue to learn new words is important.	69%	6%	0%	0%	24%
4. I can incorporate this Module in my teaching style.	31%	31%	19%	6%	12%
5. The Module can be adjusted to different kinds of students.	6%	56%	19%	6%	12%
6. I would recommend using the revised Module to other Adult Basic Reading teachers.	13%	50%	19%	6%	12%

7. Suggestions for helping an Adult Basic Reading teacher use this Module effectively include (check as many as apply):

6% none
18% more written information
53% a workshop
24% other. Explain: demonstration with ABR class

* A = always; U = usually; S = seldom; N = never; NR = no response

When asked suggestions for helping an ABR teacher use the Module effectively, the following suggestions were made in rank order: conducting a workshop (53% of the teachers), demonstration with an ABR class (24% of the teachers), and more written information (18% of the teachers). Six percent of the sample teachers made no suggestions.

Summary. In summary, 88% of the sample teachers are experienced ABR teachers and had training in the teaching of reading through in-service or a college course. The Module was field tested on students whose general reading level was distributed almost evenly among Grades 0-3.9. A majority of the teachers used the Module 15 minutes per student with six different students, repeating the Module five times with the same student. Most teachers used the Module in both class and individual instruction. The sample teachers were eclectic in their general approach to the teaching of reading, using decoding, word families, sight words, and language experience approaches.

The sample teachers reported that most students usually (77% of the teachers) could say /e/. Most students seldom (65% of the teachers) substituted /e/ for a vowel. About half of the students usually thumbed through the word without prompting (53% of the teacher sample) and the remaining students seldom did so (47% of the teachers). The response pattern reversed for the student behavior of blending words with /e/. Over half of the students seldom blended using /e/ (59% of the teachers), and one quarter of the students usually blended words using /e/ (24% of the teachers). Over half of the students could usually say the correct word after the strategy (65% of the teacher sample), and one fourth of the students seldom did so. A similar pattern occurred for the student stating

the correct word when the teacher said /e/ for the vowel. Students seldom used the strategy /e/ when reading (83% of the teachers). Although the teacher sample did not consistently agree on whether only students who hear five vowel sounds were able to learn this strategy, the most frequent response was "usually" (35% of the teachers). In rank order students had the most difficulty in: substituting /e/ for a vowel, blending the word, saying /e/, saying the correct word when the teacher uses /e/ for a vowel, stating the strategy, thumbing through the word and understanding how the strategy helps in reading. The sample teachers helped students having difficulty by four procedures: further demonstration and teacher modeling, repeating the strategy, blending, and use of other techniques such as using vowel patterns, reviewing vowel sounds, segmenting, and picture cards. A variety of other techniques were considered necessary to use with the Module such as awareness of vowel sounds, decoding, sight words, language experience approaches, cvc and cvce patterns, and writing the word phonetically.

Ninety-four percent of the teacher sample reported the Module directions were clear; 76% stated a knowledge of decoding was necessary to teach this module; 89% said the teacher's example enhanced student learning; and 88% of the teachers could think of sentences for oral practice. Teachers experienced different degrees of difficulty in usage of the Module in the instructional situation.

The most difficult aspects of teaching the Module were student learning dissonance, student resistence, student difficulty, and the lack of teacher understanding or conceptual clarity of the module. Half of the teacher sample responded to student needs by reviewing the variable /e/ strategy or using other techniques in conjunction with the strategy such as decoding, review of phonics, teaching long vowel sounds. Five teachers would use the

Module in the future but two teachers found the Module was inappropriate for the pilot site instructional program except under certain conditions. Four teachers of the 17 teacher sample suggested changes, mainly to provide a review of vowel and consonant letter sounds. One half of the teacher sample said the Module worked best with "slow learners", but there was little agreement on the appropriate grade levels within the basic reading program for Module usage. There was less agreement on the type of student who did not respond well to the Module.

The sample teachers reported the following on dissemination: 57% stated the Module complimented or facilitated the teaching of the existing reading program; 56% thought reading instruction was facilitated by focusing on one essential skill; 69% believed that teaching reading strategies enabled the adult to continue to learn new words; 52% said the Module could be incorporated into their own teaching style; 56% stated they could adjust the Module to different students; and 73% of the teachers would recommend the revised Module to other ABR teachers. To aid in implementation of the Module, 53% of the sample teachers recommended a workshop; 24% suggested demonstration with an ABR class, and 18% suggested more written information.

Discussion and Implications

The pilot modules, Module: Segmenting and Module: Variable Vowel /e/ were field tested by ABE teachers selected by a stratefied sampling procedure to be representative of the Virginia ABE program by delivery system and community type. The results, summarized in this section, are based on a 100% questionnaire return rate for the Module: Segementing and an 85% questionnaire return rate for the Module: Variable Vowel /e/. The teacher sample was composed of experienced ABR teachers who had previous training in

reading, but, with few exceptions were not reading specialists. The modules were field tested with students whose reading level was distributed evenly among Grades 0-3.9.

The modules were used extensively in the field testing. While the Module: Segmenting averaged 16-30 minutes per student, the Module: Variable Vowel /e/ averaged 15 minutes per student. Modules were used on the average of five or six times per student in both class and individual instruction. The sample teachers were eclectic in their general approach to teaching reading, using approaches such as decoding, word families, sight words, and language-experience.

The evaluation purpose was to (1) assess if teachers were able to use the pilot modules effectively, i.e. "teachability and usage;" (2) obtain information for revision of the modules; and (3) obtain information for dissemination planning. This summary reports the results of the analysis of student behaviors, teacher reactions, and dissemination information.

Evaluation determines the merit and worth of an education practice or product (Guba and Lincoln, 1981). The products in this study were two instructional modules which had implications for educational practice. Merit of a module refers to student learning and teacher usage of the strategy. Worth of a module refers to the adaptability of the module, teaching skills and knowledge necessary for implementation, identification of students who would benefit from the module, and appropriate instructional use of the modules. The discussion and implications will be presented separately for each module.

Merit and Worth of the Pilot Module: Segmenting

The pilot module was a fourteen page explanation with examples of the strategy and follow-up activities suggesting alternative procedures for using the strategy. The summary of the state field testing results are presented for student learning, teacher usage, merit of the module, adaptability of the modules, implementation needs, appropriate student group, instructional use of the module, and worth of the pilot module.

Student Learning. ABR students learned the strategy and applied the strategy to learn new words. The pre-test effectively identified those students who would benefit from acquiring the strategy. Over 60% of the teachers reported that students did not pass the pre-test, but did learn the sequential steps of the strategy: duplicate the teacher model of the strategy, thumb through the word, and apply the strategy without teacher prompting. Students had major difficulties in blending the segmented letters, and to a lesser extent segmenting a vowel sound, and segmenting letters and sounds other than the initial sound. Despite these difficulties, teachers reported students learned new words through application of the strategy.

Teacher Usage. The sample teachers used the modules with minimal implementation problems. The module directions were clear, and the strategy was easy to adapt to a variety of instructional situations, including class and individual instruction. When students had difficulties, teachers isolated the sequential steps of learning the strategy, and repeated and reinforced the activity which caused difficulty until the student learned the skill. This finding is similar to that described in Last Gamble on Education:

Dynamics of Adult Basic Education (J. Mezirow, G.G. Darkenwald, and A.B. Knox, 1975). Because the strategy was relatively simple and brief, teachers also reviewed the entire process until students acquired the strategy. The most difficult aspect in teaching the Module was adapting to the "newness" or the innovative approach. Many teachers found that students responded differently to using sounds and that to teach the strategy required "much individualization, constant supervision, and oral practice." Teachers had the knowledge and skills i.e., decoding, to make the instructional decisions necessary to resolve student difficulties. With continual usage of the Module, teachers adjusted to the innovation and developed confidence in using the strategy.

Merit of the Pilot Module. Most teachers reported that the Module had merit. The teacher sample recommended wide spread usage, i.e., diffusion, of the Module to other ABR teachers, and said they would continue to use the entire Module or components of the Module in their own instruction. Teachers felt it was important to teach reading strategies to enable the adult to continue to learn new words. This Module facilitated the teaching of reading by focusing on one essential skill which the pretest identified as an instructional need.

Adaptability of the Pilot Module. The Module facilitated or complimented the variety of existing reading programs in Virginia Adult Basic Education. The teacher sample viewed the segmenting strategy as a supplementary instructional technique, and not as an alternative reading instructional program. The divisiability and simplicity of the segmenting strategy

(Rogers and Shoemaker, 1971) made it adaptable to different teaching styles, individual students, and approaches to the teaching of reading, i.e. decoding, word families, language-experience.

Implementation Needs. The Module can be used more effectively if the teacher has knowledge and skills to teach decoding. If a student does not know 12-15 letter/sound/picture associations, as recommended in the Module, then the student does not have the pre-requisite knowledge to learn the strategy. However, even with students who have the pre-requisite knowledge, the teacher's knowledge of decoding aided in making instructional decisions to help the student acquire the strategy. It is strongly recommended that if the revised Module: Segmenting is diffused state-wide, i.e. implemented throughout the state, teachers attend a workshop regarding the Module and its appropriate instructional use.

Appropriate Student Group. The Module was most appropriate for "slow learners" in the Adult Basic Reading program. Slow leaners who benefited from the Module were primarily reading from Grades 2.0-3.9. However, other students can benefit from the segmenting strategy: ESL, L.D., and students who have not already developed their own strategies. Students who are less likely to benefit are those who have no letter/sound/picture associations.

Instructional Use. The segmenting strategy was appropriate for general use with students and a variety of reading programs. For the student who had no systematic way of learning new words, it provided a strategy. For students who do make progress, it provided an additional strategy to learn new words. For either type of student, the strategy needed to be consistently applied for progress to result.

Worth of the Pilot Module: Segmenting. In conclusion, the teacher sample strongly indicated that the pilot Module had merit, i.e. could be used effectively and students learned the strategy. The pilot Module was also worthwhile, i.e. it was adoptable; implementation was relatively easy; and the strategy met an identified student need.

Merit and Worth of the Pilot Module: Variable Vowel /e/

The pilot Module: Variable Vowel /e/ was a four page explanation illustrating steps of the strategy. There were no suggested alternative techniques or follow-up activities in the Module. The summary of the state field testing results is presented for student learning, teacher usage, merit of the pilot Module, adoptability of the Module, implementation needs, appropriate student group, instructional use of the Module, and worth of the pilot Module.

Student Learning. Students had difficulty learning the Variable Vowel /e/ strategy. Over 80% of the teachers reported that students seldom or never used the strategy /e/ without prompting. The Module structured the learning process, and the questionnaire items focused on the recommended steps to learn the strategy. Teachers reported that most students could say /e/, one of the pre-requisite skills to learn the strategy. The first step directed the teacher to model the strategy and ask the student to "guess the word" which the teacher distorted. Two-thirds of the teacher sample reported most students could say the correct word when the teacher said /e/ for the vowel, and one-third of the teachers reported students could not guess the word. The second, third, and fourth steps to learning the strategy also reflected differential student learning. Students seldom or never substituted /e/ for

the vowel (two-thirds of teacher sample), thumbed through the word without prompting (one-half of teacher sample), and blended words with /e/ (one-half of teacher sample). Two items assessed the "success rate" of student learning. Although two-thirds of the teachers reported students usually said the correct word after using the strategy, one-fourth of the teacher sample said students seldom did so. As noted above, over 80% of the teacher sample reported students seldom or never used the strategy when reading without prompting.

Teachers were asked to identify which activities students had the most difficulty learning. Those activities with which students had the most difficulty, in rank order, were substituting /e/ for the vowel and blending the word (over half of the teacher sample), saying /e/ and stating the correct word after the teacher distorted the word (about 40% of the teachers), stating the strategy (35% of the teachers), and understanding how the strategy helped in reading (24% of the teachers). These responses agree with the statistical analysis reflecting differential student learning. The major difficulties identified were step two and step four of the learning process.

Teachers helped students having difficulties with four methods: additional demonstration and teacher modeling, repeating the entire strategy, blending, i.e. fourth step in learning process, and using other methods. Other methods which teachers found "necessary to use" with their students were: reviewing vowel patterns and vowel sounds, decoding, sight words, and language experience. This suggests that most teachers returned to their previous approach to teaching instead of continual repetition and reinforcement of the strategy until the student acquired the skill. Further, some of the previous approaches to teaching reading could interfere

with learning the variable vowel /e/ strategy which required the student to deliberately distort an unknown word. Teacher understanding or conceptual clarity of the logic of the strategy seems important.

The above interpretation is congruent with responses to the questionnaire item that "only students who hear five vowel sounds are able to learn this strategy." About half the teacher sample agreed, one-third of the teacher sample disagreed, and the remaining teachers gave no response to this statement. Factors other than student ability to hear five sounds accounted for differential student learning.

Teacher Usage. Teachers were asked to respond to items regarding prerequisite knowledge and skills to effectively use the Module. Most teachers stated that the Module directions were clear; knowledge of decoding was necessary; the teacher's example of the strategy enhanced student learning; and they could think of sentences for oral practice. The questionnaire did not ask if the rationale for the strategy was clear or if the teacher thoroughly understood the strategy and its usage in reading instruction. There was no distinguishable pattern concerning the degree of difficulty in using the Module in an instructional situation. Teachers reported the Module was always, usually, seldom, and never difficult to implement.

Teacher responses to "the most difficult aspect of teaching the Module" were, in rank order, student learning dissonance, student resistence, student difficulty, and lack of understanding of the Module. Learning dissonance occurred when the Module required students to do exercises which conflicted with what the teacher had previously been emphasizing, conflicted with the student's own method of decoding words, i.e. context, spelling

association, sight techniques, or conflicted with skills previously acquired. Students resisted substituting /e/ for the vowel, giving sentences orally, and learning the strategy if unsuccessful on the first attempt. Observed student difficulties were lack of knowledge of vowel and consonant sounds, blending the vowel sound with consonant sound, and skill in saying the sound /e/.

Each of these "difficult aspects of teaching the Module" required different teacher behaviors to resolve the problem. Teachers noted this in several items. To avoid student learning dissonance, some teachers would either not use the Module or use it very selectively. To overcome student resistence, teachers modeled, reviewed, and repeated the strategy with continuous reinforcement and encouragement. To resolve student difficulties, teachers used other techniques such as reviewing vowel and consonant sounds, or segmenting. To gain a better understanding of the Module, teachers desired more time to "absorb" procedures and for further field testing. Few teachers were able to suggest changes in the Module; three recommended no changes, and five of the 17 sample teachers planned to use the Module in the future. The lack of suggested changes by the teacher sample who reported observed difficulties and differential student learning indicates teachers questioned the merit of the pilot Module.

Merit of the Pilot Module. The teacher sample responded differently to questionnaire items regarding the merit of the pilot Module. About half of the teacher sample stated that the Module complimented or facilitated teaching of reading with the existing reading program; one-fourth of the teachers said the Module was not congruent with the existing program, and 18% of the teachers did not respond. Over half of the teacher sample

reported the strategy facilitated teaching by focusing on an essential need, but 19% of the teachers disagreed, and 18% of the teachers did not respond. Three-quarters of the teacher sample saw the merit of the innovation in contrast to the pilot Module when they agreed that "teaching reading strategies to enable the adult to continue to learn new words is important." However, teachers responded differently to whether they would recommend using the revised Module to other ABR teachers: 63% of the teacher sample would; 24% of the teachers would not; and 12% of the teachers did not respond.

Adaptability of the Pilot Module. The teacher sample differed in their responses to questionnaire items regarding the adaptability of the pilot Module. As noted above, about half of the teachers stated the Module complimented the existing reading program. Teachers were unsure whether the strategy was a supplementary instructional technique or an entirely new approach to the teaching of reading which conflicted with or would replace existing approaches and reading programs. This may reflect, again, the lack of (1) clarity on the logic of the strategy, (2) understanding of the rationale of the strategy, and (3) confidence in the strategy based on continued usage and visible student learning (Rogers and Shoemaker, 1971).

Sixty-two percent of the teacher sample reported the pilot Module was adaptable to their style of teaching and that the strategy could be adjusted to different students. Twenty-four percent of the teachers did not view the strategy as adaptable and 12% of the teachers did not respond. This response pattern, similar to that regarding recommending the revised Module

for diffusion, suggests that the teacher sample viewed the strategy as one for selective use rather than general use in adult basic reading instruction.

Implementation Needs. The strategy can be used more effectively if the teacher has knowledge of decoding, can perform the teacher modeling of the strategy, and can provide sentences for oral practice by students. Most of the teacher sample had these pre-requisite skills and thought them important in teaching the strategy. Open-end responses indicated other implementation needs. Several teachers commented that they needed continual use of the Module to acquire confidence in making instructional decisions. Both teachers and students reacted to the "newness" of the innovation. Teachers needed additional techniques to use when students resisted or had difficulties in order to have the student use the strategy without prompting.

Over half of the sample teachers stated a workshop was necessary for teachers to learn to use the strategy as intended. About one-fifth of the teachers desired more written information in the Module, and some would prefer a demonstration class. It is strongly recommended that additional information be provided in the revised Module and teachers participate in a workshop before using the revised Module. The teacher sample expressed needs in (1) understanding the rationale for the strategy and the logic of the strategy, (2) clarification of the type of student who would benefit from the strategy, (3) suggestions and alternative techniques to respond to student resistence and difficulties, (4) the intended instructional use of the strategy, and (5) understanding the relationships of the strategy to the entire reading process. As the pilot Module stated, the strategy is "hard to teach directly."

Appropriate Student Group. The teacher sample reported that the strategy worked best with "slow learners", but there was no agreement on the appropriate grade level. One teacher stated that the strategy did not work with those students "who did not know letters and sounds and who are extremely closed minded." The pilot Module stated that the strategy was appropriate for "students who do not know many vowels or continually forget vowel sounds."

The precheck in the Module suggested that students must be able to "identify the vowels" by naming the vowels a, e, i, o, u, (w, y) and underlining the vowels in the workbook. The emphasis was on sight recognition of the vowel in a word, rather than knowing all of the vowel sounds. Further, the Module implied that students have some knowledge of syntax, i.e. sentence structure, and semantics, since the student must be able to recognize the correct word from the context cues provided in the sentence or phrase. Thus, for successful application of the strategy, the student must apply decoding, syntax, semantics, and context skills, yet the Module emphasizes none of these and is not intended to provide this instruction.

Instructional Use. The teacher sample viewed the variable vowel /e/ strategy as appropriate for selective use in reading instruction. Those who reviewed the strategy as having merit planned to use the strategy with only decoding. This view of selective instructional use suggests that the teacher sample did not understand the intent of the strategy nor its relationship to the entire reading process.

The intent of the variable vowel /e/ strategy was for general instructional use with most grade levels within and above the ABR program. The strategy could be applied to most approaches to reading: decoding, sight techniques, language-experience. The strategy was not intended to be used with phonics. The phonic approach emphasizes teaching all of the vowel sounds. The variable vowel /e/ strategy substitutes one sound, i.e. /e/, for all vowel sounds in order for the student to use other skills. For any instructional situation, the strategy needs to be continually reviewed and reinforced by the teacher to facilitate the student's consistent application for achievement.

Worth of the Pilot Module: Variable Vowel /e/. In conclusion, the teacher sample responses indicated differential results regarding student learning, teacher usage of the pilot Module, adoptability of the pilot Module, implementation needs, appropriate student group, and instructional use of the pilot Module. In general, most teachers did not understand the rationale and logic of the strategy and were unable to resolve student resistence and difficulties in using the pilot Module. Thus, the teacher sample questioned the merit of the strategy and the pilot Module which presented the strategy.

The teacher sample also questionned the worth of the strategy and the instructional guidelines in the pilot Module. Although about half of the teachers viewed the strategy as adaptable to teaching styles, and individual students, they were unsure if the strategy facilitated reading instruction, which students would benefit from the strategy, and the instructional use of the strategy. A number of implementation needs were stated by the teacher sample.

It is strongly recommended that the pilot Module: Variable Vowel /e/ be expanded to include (1) a rationale for the strategy and how the strategy relates to the entire learning-to-read process; (2) a clear specification of the type of student who would benefit from the strategy; (3) suggestions and alternative techniques to respond to student resistence and difficulties; (4) the intended instructional use of the strategy; and (5) the need for teacher review and reinforcement of the procedures until the adult acquires the strategy. In addition, in-service training is essential because of the nature of the innovation. The variable vowel /e/ strategy differs in significant ways from other approaches to learning new words, and from instructional techniques in which many teachers have previous training and experience.

CHAPTER V

SUMMARY AND CONCLUSIONS

Nancy Boraks

The purpose of the project was to identify four roadblocks in the learning-to-read process of the ABR, develop and evaluate strategies for overcoming these roadblocks, and develop and evaluate modules for disseminating these strategies to teachers of ABRs.

Roadblocks were evaluated using data from an indepth study of the reading behavior of ABRs (Boraks and Schumacher, 1981). It was clear that ABRs had difficulty using three of the four main word recognition cues (graphic, phonemic, semantic) and also had difficulty integrating use of cues. Therefore, strategies were developed which would enable ABRs 1) to overcome roadblocks in the use of each major word recognition cue, and 2) to integrate the use of these cues. Developing strategies which would address the full scope of word recognition cues was considered appropriate because adult basic education teachers use a variety of materials and methods and do not necessarily promote the use of any single word recogniton cue. By providing strategies promoting the effective use of each cue, the strategies would provide a resource for most teachers, not just teachers who followed one approach. For example, if teachers used the decoding approach the segmenting and variable /e/ strategies would be useful. If the sight word or language experience approach were used, the spelling/cluster and meaning strategies would be appropriate.

Strategies were developed by examining reading and learning research and more specifically by evaluating the behavior of ABRs and their teachers. One strategy promoted a behavior used by succeeding ABRs (variable /e/); in two other instances, successful teaching strategies were converted into learner self-instructional strategies (segmenting and spelling cluster). Finally, one strategy was based on theoretical and empirical research to help both succeeding and non-succeeding ABRs overcome the limited use of semantic cues. This strategy (meaning) was developed by analyzing reasons why ABRs failed to use semantic cues. Solutions to this roadblock were sought in relevant research.

The four strategies were adapted and evaluated over a nine month period of local field-testing during which three graduate students taught these strategies to ABRs. These lessons were taped and analyzed. Revisions were made to facilitate acceptance, learning, teaching and use of the strategies. Four separate modules, each presenting one strategy to ABR teachers, were developed. Three modules were evaluated over a three month period using a state-wide population of teachers from local, rural and suburban areas. Data from only two modules was complete and therefore only this data was analyzed in depth. However, feedback from state field-testing of all three modules provided data useful in revising both strategies and modules. Resultant changes to the module included, 1) extended explanation of rationale and background of the modules, 2) teacher self-evaluation exercises, 3) guidelines for a teacher workshop, and 4) a questions and answer section.

Insight into how and why teachers make changes in instructional strategies was also gained from this research. For example, teachers tended to adapt strategies to prompt not student reflection but student response; thus explanations of the rationale of steps which did not lend themselves to responsive behavior were dropped. In addition, teachers tended to drop the strategy entirely when a completely correct response was not elicited. Therefore, strategies which depended on gradually increasing correct successive approximations and not a total correct response were not readily accepted. The ideal instructional strategy appeared to be one where a student "echoed" a modeled teacher behavior. In this way all expected responses would be likely to occur and be reinforced. Essentially, teachers were concerned with students' fear of failure and lack of willingness to take risks; teaching of an absolute correct response obviated apparent failure and risk taking.

Changes were made to accomodate these teacher behaviors. However, in many cases changes addressed the teacher concerns, rather than the required student behavior. For example, all the strategies were developed to provide ABRs with an independent approach for getting enough cues to identify a word. The independent strategies required use of successive approximations or a form of guessing which to the ABR is risk taking. Teachers were reluctant to promote student behavior requiring risk-taking. To overcome teacher reluctance to use these strategies, the fear of failure was reduced by making use of the strategy itself the correct specific behavior. Thus, teachers and ABRs were encouraged to focus upon and reinforce the use of the strategy and not the accuracy of word calling.

Other changes included, 1) extended evaluation of the strategy, 2) extended clarification of when the strategy was to be used, and 3) simplification of student steps.

Conclusions

Data from the transcripts, field notes of locally piloted strategies, and feedback from state-wide field-testing confirmed and provided insight into factors which make instructional strategies for ABRs feasible. It was found that ABRs are more likely to adopt a strategy if:

1. They understand the rationale and recognize the function of the strategy. That is, ABRs have to know they are learning a technique, not a skill.
2. The teacher is committed to the strategy.
3. The teacher repeatedly models and prompts use of the strategy.
4. Peers use the strategy.
5. Student adaptations are accepted, and encouraged.
6. Strategies are simple.
7. Strategies include a feedback or self-assessment system.
8. Signs of success or progress are made evident.
9. Strategies are introduced at initial phases of instruction.
10. Strategies require minimal behavior changes.

This research also either confirmed or provided insight into factors which makes it likely that teachers would adopt instructional strategies. These teachers of ABRs were likely to adopt instructional strategies when:

1. They have been involved in a demonstration and provided with related reference materials.
2. They are aware of the related specific reading needs of ABRs.
3. They can match the strategy to the ABR's problem; that is, use strategies selectively.
4. They can adapt the strategies to their own teaching style.
5. They can easily learn the strategy.
6. Students respond as expected.
7. The strategy has familiar and innovative elements.
8. They feel use of the strategy has administrative support.
9. The strategy does not conflict with previously strongly held beliefs.
10. They have peer support.
11. The strategy can readily be incorporated into their current teaching context.
12. They experience immediate success, i.e., students immediately respond correctly (as expected) or students learn the strategy immediately.
13. They know the behavior to be reinforced.
14. They believe the strategy is a supplement not a replacement to existing approaches.
15. They believe the strategy has been realistically assessed, and presented, i.e. that it is not over-sold as a cure-all.

The final strategies and related modules presenting these strategies to teachers incorporate or promote many of the above guidelines. The expected and most difficult aspect of bringing about a change in both student and teacher behavior was their mutual desire to avoid risk or failure. At the same time the mutual desire of both teacher and student to succeed provided

the basis for suggesting change. The strategies developed here should promote greater success in learning to read and thus should be readily incorporated where needed.

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APPENDIX

Teacher Questionnaire Module: Segmenting

Teacher Questionnaire Module: Variable Vowel /e/

TEACHER QUESTIONNAIRE

STRATEGY: VARIABLE VOWEL /e/

Your responses to this questionnaire will aid the staff of the "310 Project: Ethnographic Research on Reading Instructional Strategies for Adult Basic Readers" to revise the Strategy. We appreciate your cooperation in state field testing the Strategy and completing this questionnaire. We need your name and program only to identify questionnaires returned, but all responses will be kept confidential. Please mail the questionnaire on or before February 26, 1982, Dr. Nancy Boraks and Dr. Sally Schumacher, Virginia Commonwealth University, School of Education, Richmond, VA, 23284, in the enclosed envelope.

Information on Usage

Name of pilot teacher: _____
(only to identify those not returning the questionnaire and Strategy)

School Division: _____

1. I have taught Adult Basic Readers (ABRs) for (check one):

   ___ this year ___ 1-3 years ___ 4-6 years ___ over 7 years

2. I have had training in the teaching of reading. ___ yes ___no

   If yes, state type of training:

   ___ college course

   ___ in-service training for ___ 2 hrs. ___ 4 hrs. ___ 8 hrs. or more

3. The Strategy took (check one) minutes per student to use.

   ___ 15 min. ___ 16-30 min. ___ 31-45 min. ___ over 46 min.

4. I used the Strategy with ABRs who were generally reading at (check one or more):

   ___ Grade 0-.9 ___ Grade 1-1.9 ___ Grade 2-2.9 ___ Grade 3-3.9

5. I used the Strategy with ___ number of ABRs.

6. I used the Strategy with the same student ___ number of times.

7. I used the Strategy in (check as many as apply):

___ class of ___ number of students ___ individual instruction

___ other. Explain: _____

8. I generally use the following approach(es) in teaching reading (check one or more):

___ decoding ___ language-experience

___ word families ___ other. Explain: _

___ sight words _____

Student Behaviors (Check only one response)

		A	U	S	N
9.	Students can say /e/.	___	___	___	___
10.	Students substitute /e/ for a vowel.	___	___	___	___
11.	Students thumb through a word without prompting.	___	___	___	___
12.	Students blend words using /e/.	___	___	___	___
13.	Students say the correct word after the strategy.	___	___	___	___
14.	Students say the correct word when the teacher says /e/ for the vowel.	___	___	___	___
15.	Students use the strategy /e/ when reading without prompting.	___	___	___	___
16.	Only students who hear five vowel sounds are able to learn this strategy.	___	___	___	___

17. Students had the most difficulty in (check as many as apply):

____ saying /e/

____ saying the correct word when the teacher uses /e/ for a vowel

____ underlining the vowel in a word

____ thumbing through the word

____ blending the word

____ substituting /e/ for a vowel

____ repeating vowels after teacher provides example

____ stating the strategy

____ understanding how the strategy helps in reading

____ other. Explain: _____

18. I helped the students having difficulty by the following methods:

_____

_____

_____

_____

19. In addition to the procedures used in the Strategy, what other technique(s) did you find necessary to use with your students?

_____

_____

_____

_____

Teacher Reactions (check only one response)

		A	U	S	N
20.	The directions in the Strategy were clear.	___	___	___	___
21.	Knowledge of decoding is necessary to teach this Strategy.	___	___	___	___
22.	I thought of sentences for oral practice.	___	___	___	___
23.	Teacher's example of the Strategy enhanced student learning.	___	___	___	___
24.	It was difficult to use the Strategy in my situation.	___	___	___	___

25. The most difficult aspect of teaching the Strategy was: _____

_____

_____

26. I plan to use the following techniques in the Strategy in future instruction:

_____

_____

_____

27. The following changes in the Strategy would be helpful: _____

_____

_____

28. This Strategy worked best with what type of student (ESL, slow learners, grade levels)? _____

29. This Strategy did not work well with what type of student (ESL, slow learners, grade levels)? _____

Dissemination Information

	A	U	S	N
30. This Strategy compliments or facilitates the teaching of reading with the existing reading program.	___	___	___	___
31. This Strategy facilitates the teaching of reading by focusing on one essential need.	___	___	___	___
32. Teaching reading strategies to enable the adult to continue to learn new words is important.	___	___	___	___
33. I can incorporate this Strategy in my teaching style.	___	___	___	___
34. I would recommend using the revised Strategy to other Adult Basic Reading teachers.	___	___	___	___

36. Suggestions for helping an Adult Basic Reading teacher use this Strategy effectively include: (check as many as apply):

___ none

___ more written information

___ a workshop

___ other. Explain: _____

Please mail this questionnaire and the Strategy on or before February 26, 1982 to:

Dr. Nancy Boraks and Dr. Sally Schumacher
Virginia Commonwealth University
School of Education
Richmond, Virginia 23284

TEACHER QUESTIONNAIRE

STRATEGY: SEGMENTING

Your responses to this questionnaire will aide the staff of the"310 Project: Ethnographic Research on Reading Instructional Strategies for Adult Basic Readers" to revise the Strategy. We appreciate your cooperation in state field testing the Strategy and completing this questionnaire. We need your name and program only to identify questionnaires returned, but all responses will be kept confidential. Please mail the questionnaire on or before February 26, 1982,to Dr. Nancy Boraks and Dr. Sally Schumacher, Virginia Commonwealth University, School of Education, Richmond, VA, 23284, in the enclosed envelope.

Information on Usage

Name of pilot teacher: _____
(only to identify those not returning the questionnaire and strategy)

School Division: _____

1. I have taught Adult Basic Readers (ABRs) for (check one):

   ___ this year ___ 1-3 years ___ 4-6 years ___ over 7 years

2. I have had training in the teaching of reading. ___ yes ___ no

   If yes, state type of training:

   ___ college course

   ___ in-service training for ___ 2 hrs. ___ 4 hrs. ___ 8 hrs. or more

3. The Strategy took (check one) minutes per student to use.

   ___ 15 min. ___ 16-30 min. ___ 31-45 min. ___ over 46 min.

4. I used the Strategy with ABRs who were generally reading at (check one or more):

   ___ Grade 0-.9 ___ Grade 1-1.9 ___ Grade 2-2.9 ___ Grade 3-3.9

5. I used the Strategy with ___ number of ABRs.

6. I used the Strategy with the same student ___ number of times.

7. I used the Strategy in (check as many as apply):

___ class of ___ number of students ___ individual instruction

___ other. Explain: _____

8. I generally use the following approach(es) in teaching reading: (check one or more):

___ decoding ___ language-experience

___ word families ___ other. Explain: _____

___ sight words _____

Student Behaviors (Check only one response)

	A	U	S	N
9. Students passed the pre-test.	___	___	___	___
10. Students duplicated teacher example of segmenting strategy.	___	___	___	___
11. Students thumb through a word.	___	___	___	___
12. Students applied segmenting as a strategy to learn new words.	___	___	___	___

13. Students had the most difficulty in (check as many as apply):

____ segmenting initial sound

____ segmenting a vowel sound

____ segmenting final sound

____ segmenting each letter

____ thumbing through the word

____ recognizing they do not know a word

___ shaking their head for a sound not known

___ blending the segmented letters

___ other. Explain: _____

14. I helped the students having difficulty by the following methods:

_____

_____

_____

_____

15. In addition to the procedures used in the Strategy, what other technique(s) did you find necessary to use with your students?

_____

_____

_____

_____

Teacher Reactions (Check only one response)

	A	U	S	N
16. The directions in the Strategy were clear.	___	___	___	___
17. Knowledge of decoding is necessary to teach this Strategy.	___	___	___	___
18. I used the Alternative Practices/Ideas.	___	___	___	___
19. Oral practice enhanced student learning.	___	___	___	___

	A	U	S	N
20. Teacher's example of the reading strategy enhanced student learning.	___	___	___	___
21. It was difficult to use the Strategy in my situation.	___	___	___	___

22. The most difficult aspect of teaching the Strategy was: _____

_____

_____

23. I plan to use the following techniques in the Strategy in future instruction: _____

_____

_____

24. The following changes in the Strategy would be helpful: _____

_____

_____

25. This Strategy worked best with what type of student (ESL, slow learners, grade levels)? _____

26. This Strategy did not work well with what type of student (ESL, slow learners, grade levels)? _____

Dissemination Information

	A	U	S	N
27. This Strategy compliments or facilitates the teaching of reading with the existing reading program.	___	___	___	___

		A	U	S	N
28.	This Strategy facilitates the teaching of reading by focusing on one essential need.	___	___	___	___
29.	Teaching reading strategies to enable the adult to continue to learn new words is important.	___	___	___	___
30.	I can incorporate this Strategy in my teaching style.	___	___	___	___
31.	The Strategy can be adjusted to different kinds of students.	___	___	___	___
32.	I would recommend using the revised Strategy to other Adult Basic Reading teachers.	___	___	___	___

33. Suggestions for helping an Adult Basic Reading teacher use this Strategy effectively include: (check as many as apply):

___ none

___ more written information

___ a workshop

___ other. Explain: _____

_____

_____

Please mail this questionnaire and the Strategy on or before February 26, 1982, to:

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Richmond, VA 23284